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Sequence Listing



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Gerber, Hanspeter
Gerritsen, Mary E.
Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
Kljavin, Ivar J.
Kuo, Sophia S.
Napier, Mary A.
Pan, James;
Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
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Williams, P. Mickey
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| Ile | Leu | Leu | Lys | His | Lys | Tyr | Ser | Phe | Leu | Val | Gly | Cys | Ala | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Ser | Asp | Val | Ile | Ala | Gln | Val | Val | Phe | Val | Ala | Ile | Leu | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| His | Ser | His | Leu | Glu | Cys | Arg | Glu | Pro | Leu | Leu | Ile | Pro | Ile | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Leu | Tyr | Met | Gly | Ala | Leu | Val | Arg | Cys | Thr | Thr | Leu | Cys | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | |
|---|-----|-----|-----|
| Gly Tyr Tyr Lys Asn Ile His Asp Ile Ile Pro Asp Arg Ser Gly | 215 | 220 | 225 |
| Pro Glu Leu Gly Gly Asp Ala Thr Ile Arg Lys Met Leu Ser Phe | 230 | 235 | 240 |
| Trp Trp Pro Leu Ala Leu Ile Leu Ala Thr Gln Arg Ile Ser Arg | 245 | 250 | 255 |
| Pro Ile Val Asn Leu Phe Val Ser Arg Asp Leu Gly Gly Ser Ser | 260 | 265 | 270 |
| Ala Ala Thr Glu Ala Val Ala Ile Leu Thr Ala Thr Tyr Pro Val | 275 | 280 | 285 |
| Gly His Met Pro Tyr Gly Trp Leu Thr Glu Ile Arg Ala Val Tyr | 290 | 295 | 300 |
| Pro Ala Phe Asp Lys Asn Asn Pro Ser Asn Lys Leu Val Ser Thr | 305 | 310 | 315 |
| Ser Asn Thr Val Thr Ala Ala His Ile Lys Lys Phe Thr Phe Val | 320 | 325 | 330 |
| Cys Met Ala Leu Ser Leu Thr Leu Cys Phe Val Met Phe Trp Thr | 335 | 340 | 345 |
| Pro Asn Val Ser Glu Lys Ile Leu Ile Asp Ile Ile Gly Val Asp | 350 | 355 | 360 |
| Phe Ala Phe Ala Glu Leu Cys Val Val Pro Leu Arg Ile Phe Ser | 365 | 370 | 375 |
| Phe Phe Pro Val Pro Val Thr Val Arg Ala His Leu Thr Gly Trp | 380 | 385 | 390 |
| Leu Met Thr Leu Lys Lys Thr Phe Val Leu Ala Pro Ser Ser Val | 395 | 400 | 405 |
| Leu Arg Ile Ile Val Leu Ile Ala Ser Leu Val Val Leu Pro Tyr | 410 | 415 | 420 |
| Leu Gly Val His Gly Ala Thr Leu Gly Val Gly Ser Leu Leu Ala | 425 | 430 | 435 |
| Gly Phe Val Gly Glu Ser Thr Met Val Ala Ile Ala Ala Cys Tyr | 440 | 445 | 450 |
| Val Tyr Arg Lys Gln Lys Lys Lys Met Glu Asn Glu Ser Ala Thr | 455 | 460 | 465 |
| Glu Gly Glu Asp Ser Ala Met Thr Asp Met Pro Pro Thr Glu Glu | 470 | 475 | 480 |
| Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn Glu | 485 | 490 | |

<210> 8
<211> 535
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 33, 66, 96, 387
<223> unknown base

<400> 8
cctgacagaa gtgccccgga gctgggggag atncaacatt aagaagatgc 50
tgagcttctg gtgcnttttg gctctaattc tggccacaca gagaancagt 100
cggcctattg tcaacctctt tgtttcccg gaccttggtg gcagttctgc 150
agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200
tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250
aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300
ggccacatc aagaagttca ccttcgtctg catggctctg tcactcacgc 350
tctgtttcgt gatgttttg acaccaacg tgtctgngaa aatcttgata 400
gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450
gcggatcttc tccttcttcc cagttccagt cacagtgagg gcgcatctca 500
ccgggtggct gatgacactg aagaaaacct tcgtc 535

<210> 9
<211> 434
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,
293, 296, 305, 336, 358, 361
<223> unknown base

<400> 9
tgacggaatc ccgggctggg tatcctgggt tngacaagat aaacccccag 50
caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100
agttcacctt ngtttgnatg gntctgtcaa ctcacgctnt gtttcgtgat 150
gttttgagca ccaaagtgt ttgagaaaat tttgatagac atnatcggag 200
tggantttgc ctttgagaa ntttgngntg ttcctttgcg gattttctcc 250
tttttcccag ttccagtcac agngaggggc catctcaccg ggnggntgat 300

gacantgaag aaaacctttg tcttgcccc cagctntttg gtgcggatca 350
ttgtcctnat ngccagcctt gtggctctac cctacctggg ggtgcacggt 400
gcgaccctgg gcgtgggttc cctcctggcg ggca 434

<210> 10
<211> 154
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 33, 49, 68, 83, 90, 98, 119
<223> unknown base

<400> 10
tattcccgat tccgggtcacg gggagggcgc atntcaccgg gtggctgang 50
acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100
cgtcctcatc gccagcctng tggctctacc ctacctgggg gtgcacggtg 150
agac 154

<210> 11
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 11
ctgatccggt tcttggtgcc cctg 24

<210> 12
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 12
gctctgtcac tcacgctc 18

<210> 13
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 13
tcattcttcc cctctccc 18

<210> 14
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 14
ccttccgccg cggagttc 18

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 15
ggcaaagtcc actccgatga tgtc 24

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 16
gcctgctgtg gtcacaggtc tccg 24

<210> 17
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcggggagca ggccttgaac cggggcattg ctgctgtcaa ggagg 45

<210> 18
<211> 1901
<212> DNA
<213> Homo sapiens

<400> 18
gccccgcgcc cggcgccggg cgcccgaagc cgggagccac cgccatgggg 50
gcctgcctgg gagcctgtc cctgtcagc tgcgcgtcct gcctctgcgg 100
ctctgcccc tgcacctgt gcagctgctg ccccgccagc cgcaactcca 150

ccgtgagccg cctcatcttc acgtttcttc tcttcctggg ggtgctggtg 200
tccatcatta tgctgagccc gggcgtggag agtcagctct acaagctgcc 250
ctgggtgtgt gaggaggggg ccgggatccc caccgtcctg cagggccaca 300
tcgactgtgg ctccctgctt ggctaccgag ctgtctaccg catgtgcttc 350
gccacggcgg ccttcttctt cttctttttc accctgctca tgctctgcgt 400
gagcagcagc cgggaccccc gggctgccat ccagaatggg ttttggttct 450
ttaagttcct gatcctggtg ggctcaccg tgggtgcctt ctacatccct 500
gacggctcct tcaccaacat ctggttctac ttcggcgtcg tgggctcctt 550
cctcttcata ctcattccagc tgggtgctgt catcgacttt gcgcactcct 600
ggaaccagcg gtggctgggc aaggccgagg agtgcgattc ccgtgcctgg 650
tacgcaggcc tcttcttctt cactctcttc ttctacttgc tgcgatcgc 700
ggcgtggcg ctgatgttca tgtactacac tgagcccagc ggctgccacg 750
agggcaaggc cttcatcagc ctcaacctca ccttctgtgt ctgcgtgtcc 800
atcgctgctg tcctgcccaa ggtccaggac gccagccca actcgggtct 850
gctgcaggcc tcggtcatca ccctctacac catgtttgtc acctggtcag 900
ccctatccag tatccctgaa cagaaatgca accccattt gccaacccag 950
ctgggcaacg agacagttgt ggcaggcccc gagggctatg agaccagtg 1000
gtgggatgcc ccgagcattg tgggcctcat catcttcttc ctgtgcaccc 1050
tcttcatcag tctgcgctcc tcagaccacc ggcaggtgaa cagcctgatg 1100
cagaccgagg agtgcaccac tatgctagac gccacacagc agcagcagca 1150
gcaggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200
tcacctacag ctactccttc ttccatttct gcctggtgct ggctcactg 1250
cacgtcatga tgacgctcac caactggtac aagcccgggtg agaccggaa 1300
gatgatcagc acgtggaccg ccgtgtgggt gaagatctgt gccagctggg 1350
cagggtgct cctctacctg tggaccctgg tagccccact cctcctgcgc 1400
aaccgcgact tcagctgagg cagcctcaca gcctgccatc tgggtgcctcc 1450
tgccacctgg tgccctctcg ctcggtgaca gccaacctgc cccctcccca 1500
caccaatcag ccaggtgag cccccacccc tgccccagct ccaggacctg 1550
ccctgagcc gggccttcta gtcgtagtgc cttcagggtc cgaggagcat 1600

caggctcctg cagagcccca tcccccgcc acaccacac ggtggagctg 1650
 cctcttcctt cccctcctcc ctgttgccca tactcagcat ctcggatgaa 1700
 agggctccct tgtcctcagg ctccacggga gcggggctgc tggagagagc 1750
 ggggaactcc caccacagtg gggcatccgg cactgaagcc ctggtgttcc 1800
 tggtcacgtc ccccagggga ccctgcccc ttctgggact tcgtgcctta 1850
 ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900

a 1901

<210> 19

<211> 457

<212> PRT

<213> Homo sapiens

<400> 19

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Ala | Cys | Leu | Gly | Ala | Cys | Ser | Leu | Leu | Ser | Cys | Ala | Ser | 1 | 5 | 10 | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Ile | Leu | Cys | Ser | Cys | Cys | Pro | 20 | 25 | 30 | |
| Ala | Ser | Arg | Asn | Ser | Thr | Val | Ser | Arg | Leu | Ile | Phe | Thr | Phe | Phe | 35 | 40 | 45 | |
| Leu | Phe | Leu | Gly | Val | Leu | Val | Ser | Ile | Ile | Met | Leu | Ser | Pro | Gly | 50 | 55 | 60 | |
| Val | Glu | Ser | Gln | Leu | Tyr | Lys | Leu | Pro | Trp | Val | Cys | Glu | Glu | Gly | 65 | 70 | 75 | |
| Ala | Gly | Ile | Pro | Thr | Val | Leu | Gln | Gly | His | Ile | Asp | Cys | Gly | Ser | 80 | 85 | 90 | |
| Leu | Leu | Gly | Tyr | Arg | Ala | Val | Tyr | Arg | Met | Cys | Phe | Ala | Thr | Ala | 95 | 100 | 105 | |
| Ala | Phe | Phe | Phe | Phe | Phe | Phe | Thr | Leu | Leu | Met | Leu | Cys | Val | Ser | 110 | 115 | 120 | |
| Ser | Ser | Arg | Asp | Pro | Arg | Ala | Ala | Ile | Gln | Asn | Gly | Phe | Trp | Phe | 125 | 130 | 135 | |
| Phe | Lys | Phe | Leu | Ile | Leu | Val | Gly | Leu | Thr | Val | Gly | Ala | Phe | Tyr | 140 | 145 | 150 | |
| Ile | Pro | Asp | Gly | Ser | Phe | Thr | Asn | Ile | Trp | Phe | Tyr | Phe | Gly | Val | 155 | 160 | 165 | |
| Val | Gly | Ser | Phe | Leu | Phe | Ile | Leu | Ile | Gln | Leu | Val | Leu | Leu | Ile | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Asp | Phe | Ala | His | Ser | Trp | Asn | Gln | Arg | Trp | Leu | Gly | Lys | Ala | Glu | | 185 | 190 | 195 |
| Glu | Cys | Asp | Ser | Arg | Ala | Trp | Tyr | Ala | Gly | Leu | Phe | Phe | Phe | Thr | | 200 | 205 | 210 |
| Leu | Leu | Phe | Tyr | Leu | Leu | Ser | Ile | Ala | Ala | Val | Ala | Leu | Met | Phe | | 215 | 220 | 225 |
| Met | Tyr | Tyr | Thr | Glu | Pro | Ser | Gly | Cys | His | Glu | Gly | Lys | Val | Phe | | 230 | 235 | 240 |
| Ile | Ser | Leu | Asn | Leu | Thr | Phe | Cys | Val | Cys | Val | Ser | Ile | Ala | Ala | | 245 | 250 | 255 |
| Val | Leu | Pro | Lys | Val | Gln | Asp | Ala | Gln | Pro | Asn | Ser | Gly | Leu | Leu | | 260 | 265 | 270 |
| Gln | Ala | Ser | Val | Ile | Thr | Leu | Tyr | Thr | Met | Phe | Val | Thr | Trp | Ser | | 275 | 280 | 285 |
| Ala | Leu | Ser | Ser | Ile | Pro | Glu | Gln | Lys | Cys | Asn | Pro | His | Leu | Pro | | 290 | 295 | 300 |
| Thr | Gln | Leu | Gly | Asn | Glu | Thr | Val | Val | Ala | Gly | Pro | Glu | Gly | Tyr | | 305 | 310 | 315 |
| Glu | Thr | Gln | Trp | Trp | Asp | Ala | Pro | Ser | Ile | Val | Gly | Leu | Ile | Ile | | 320 | 325 | 330 |
| Phe | Leu | Leu | Cys | Thr | Leu | Phe | Ile | Ser | Leu | Arg | Ser | Ser | Asp | His | | 335 | 340 | 345 |
| Arg | Gln | Val | Asn | Ser | Leu | Met | Gln | Thr | Glu | Glu | Cys | Pro | Pro | Met | | 350 | 355 | 360 |
| Leu | Asp | Ala | Thr | Gln | Gln | Gln | Gln | Gln | Gln | Val | Ala | Ala | Cys | Glu | | 365 | 370 | 375 |
| Gly | Arg | Ala | Phe | Asp | Asn | Glu | Gln | Asp | Gly | Val | Thr | Tyr | Ser | Tyr | | 380 | 385 | 390 |
| Ser | Phe | Phe | His | Phe | Cys | Leu | Val | Leu | Ala | Ser | Leu | His | Val | Met | | 395 | 400 | 405 |
| Met | Thr | Leu | Thr | Asn | Trp | Tyr | Lys | Pro | Gly | Glu | Thr | Arg | Lys | Met | | 410 | 415 | 420 |
| Ile | Ser | Thr | Trp | Thr | Ala | Val | Trp | Val | Lys | Ile | Cys | Ala | Ser | Trp | | 425 | 430 | 435 |
| Ala | Gly | Leu | Leu | Leu | Tyr | Leu | Trp | Thr | Leu | Val | Ala | Pro | Leu | Leu | | 440 | 445 | 450 |
| Leu | Arg | Asn | Arg | Asp | Phe | Ser | | | | | | | | | | 455 | | |

<210> 20
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 20
gccgcctcat cttcacgttc ttcc 24

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 21
tcatccagct ggtgctgctc 20

<210> 22
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 22
cttcttccac ttctgctgg 20

<210> 23
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 23
cctgggcaaa aatgcaac 18

<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 24
caggaatgta gaaggcaccc acgg 24

<210> 25
<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 25

tgccacagat cttcacccac acgg 24

<210> 26

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 26

tgtccatcat tatgctgagc ccgggcgtgg agagtcagct ctacaagctg 50

<210> 27

<211> 1351

<212> DNA

<213> Homo sapiens

<400> 27

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ttaacctggg tcaaatgcac ggattctcac ctctgacagt tacgctctcc 100
cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150
aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250
actgccgatt cggaagtcct tgaggagcgt cagaagcggc ttccctacgt 300
cccagagccc tattaccgga aatctggatg ggaccgcctc cgggagctgt 350
ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400
aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450
agcttttatt catgctaaac aacaatacat tgagcagagc caggcagaaa 500
tttatcataa ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca 550
cgaggcttca ttcgttatgg ctggcgctgg ggttgagaaa ctgcagtgtt 600
tgtgactata ttcaacacag tgaacactag tctgaatgta taccgaaata 650
aagatgcctt aagccatttt gtaattgcag gagctgtcac gggaagtctt 700
tttaggataa acgtaggcct gcgtggcctg gtggctggtg gcataattgg 750
agccttgctg ggcactcctg taggaggcct gctgatggca tttcagaagt 800

acgctggtga gactgttcag gaaagaaaac agaaggatcg aaaggcactc 850
 catgagctaa aactggaaga gtggaaaggc agactacaag ttactgagca 900
 cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950
 atgctaagaa aattgaagca ctgctaaacc ttcctagaaa cccttcagta 1000
 atagataaac aagacaagga ctgaaagtgc tctgaacttg aaactcactg 1050
 gagagctgaa gggagctgcc atgtccgatg aatgccaaca gacaggccac 1100
 tctttggtca gcctgctgac aaatttaagt gctggtacct gtggtggcag 1150
 tggcttgctc ttgtcttttt cttttctttt taactaagaa tggggctggt 1200
 gtactctcac ttacttatc cttaaattta aatacatact tatgtttgta 1250
 ttaatctatc aatatatgca tacatggata tatccacca cctagatttt 1300
 aagcagtaaa taaaacattt cgcaaaagat taaagttgaa ttttacagtt 1350
 t 1351

<210> 28
 <211> 285
 <212> PRT
 <213> Homo sapiens

<400> 28
 Met Glu Val Pro Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala
 1 5 10 15
 Leu Cys Leu Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala
 20 25 30
 Asp Ser Glu Val Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val
 35 40 45
 Pro Glu Pro Tyr Tyr Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu
 50 55 60
 Leu Phe Gly Lys Asp Glu Gln Gln Arg Ile Ser Lys Asp Leu Ala
 65 70 75
 Asn Ile Cys Lys Thr Ala Ala Thr Ala Gly Ile Ile Gly Trp Val
 80 85 90
 Tyr Gly Gly Ile Pro Ala Phe Ile His Ala Lys Gln Gln Tyr Ile
 95 100 105
 Glu Gln Ser Gln Ala Glu Ile Tyr His Asn Arg Phe Asp Ala Val
 110 115 120
 Gln Ser Ala His Arg Ala Ala Thr Arg Gly Phe Ile Arg Tyr Gly
 125 130 135

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Arg | Trp | Gly | Trp | Arg | Thr | Ala | Val | Phe | Val | Thr | Ile | Phe | Asn | 140 | 145 | 150 |
| Thr | Val | Asn | Thr | Ser | Leu | Asn | Val | Tyr | Arg | Asn | Lys | Asp | Ala | Leu | 155 | 160 | 165 |
| Ser | His | Phe | Val | Ile | Ala | Gly | Ala | Val | Thr | Gly | Ser | Leu | Phe | Arg | 170 | 175 | 180 |
| Ile | Asn | Val | Gly | Leu | Arg | Gly | Leu | Val | Ala | Gly | Gly | Ile | Ile | Gly | 185 | 190 | 195 |
| Ala | Leu | Leu | Gly | Thr | Pro | Val | Gly | Gly | Leu | Leu | Met | Ala | Phe | Gln | 200 | 205 | 210 |
| Lys | Tyr | Ala | Gly | Glu | Thr | Val | Gln | Glu | Arg | Lys | Gln | Lys | Asp | Arg | 215 | 220 | 225 |
| Lys | Ala | Leu | His | Glu | Leu | Lys | Leu | Glu | Glu | Trp | Lys | Gly | Arg | Leu | 230 | 235 | 240 |
| Gln | Val | Thr | Glu | His | Leu | Pro | Glu | Lys | Ile | Glu | Ser | Ser | Leu | Arg | 245 | 250 | 255 |
| Glu | Asp | Glu | Pro | Glu | Asn | Asp | Ala | Lys | Lys | Ile | Glu | Ala | Leu | Leu | 260 | 265 | 270 |
| Asn | Leu | Pro | Arg | Asn | Pro | Ser | Val | Ile | Asp | Lys | Gln | Asp | Lys | Asp | 275 | 280 | 285 |

<210> 29
 <211> 324
 <212> DNA
 <213> Homo sapiens

<400> 29
 cggaagtccc ttgaggagcg tcagaagcgg cttccctacg tcccagagcc 50
 ctattacccg gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100
 tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150
 ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200
 catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250
 ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300
 ttcgttcattg gctggcgccg aacc 324

<210> 30
 <211> 377
 <212> DNA
 <213> Homo sapiens

<220>

<221> unsure
<222> 262, 330, 371
<223> unknown base

<400> 30
tcaagtttgt ccgtaggtcg agagaaggcc atggaggtgc cgccaccggc 50
accgcggagc ttttttctgt agagcattgt gcctatttcc ccgagttttt 100
gctgccgaag ctgtgactgc cgattcggaa gtccttgagg agcgtcagaa 150
gcggtctccc tacgtcccag agccctatta cccggaattt ggatgggacc 200
gcctccggga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250
cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggctgggt 300
gtatggggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350
agagccaggc agaaatttat nataacc 377

<210> 31
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 31
tcgtacagtt acgctctccc 20

<210> 32
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 32
cttgaggagc gtcagaagcg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
ataacgaatg aagcctcgtg 20

<210> 34
<211> 40
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 34

gctaatatct gtaagacggc agctacagca ggcattcattg 40

<210> 35

<211> 1819

<212> DNA

<213> Homo sapiens

<400> 35

gagccgcccgc cgcgcgcgcgc cgcgcgcactg cagccccagg ccccgggccc 50

ccaccacacgt ctgcgttgct gcccgcctg ggccaggccc caaaggcaag 100

gacaaagcag ctgtcagga acctccgccg gagtcgaatt tacgtgcagc 150

tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200

aagaactgcc tgtgcgcct caacctgctt tacaccttg ttagtctgct 250

gctaattgga attgctgcgt ggggcattgg ctgcggctg atttccagtc 300

tccgagtggc cggcgtggct attgcagtgg gcatcttctt gttcctgatt 350

gcttttagtggt gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400

tttttatatg attattctgt tacttgatt tattgttcag tttctgtat 450

cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500

gttggttgga acaatacggc aagtgtcga aatgacatcc agagaaatct 550

aaactgctgt gggttccgaa gtgttaacc aaatgacacc tgtctggcta 600

gctgtgttaa aagtgaccac tcgtgctcgc catgtgctcc aatcatagga 650

gaatatgctg gagaggtttt gagatttggt ggtggcattg gcctgttctt 700

cagttttaca gagatcctgg gtgtttggct gacctacaga tacaggaacc 750

agaaagaccc ccgcgcgaat cctagtgcac tcctttgatg agaaaacaag 800

gaagatttcc tttcgtatta tgatcttggt cactttctgt aattttctgt 850

taagctccat ttgccagttt aaggaaggaa acactatctg gaaaagtacc 900

ttattgatag tggaattata tatttttact ctatgtttct ctacatgttt 950

ttttctttcc gttgctgaaa aatatttgaa acttggtggtc tctgaagctc 1000

ggtggcacct ggaatttact gtattcattg tcgggcactg tccactgtgg 1050

cctttcttag catttttacc tgcagaaaaa ctttgatgg taccactgtg 1100

ttggttatat ggtgaatctg aacgtacatc tcactggtat aattatatgt 1150
 agcactgtgc tgtgtagata gttcctactg gaaaaagagt ggaaatttat 1200
 taaaatcaga aagtatgaga tcctggtatg ttaagggaaa tccaaattcc 1250
 caattttttt tggctctttt aggaaagatt gttgtggtaa aaagtgttag 1300
 tataaaaatg ataatttact tgtagtcttt tatgattaca ccaatgtatt 1350
 ctagaaatag ttatgtctta ggaaattgtg gtttaatttt tgactttttac 1400
 aggtaagtgc aaaggagaag tggtttcatg aaatgttcta atgtataata 1450
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 aagtatatct atatgatctt gatattgttt tataataatt tgaagtctaa 1550
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 ttctcagtat tgtaacagca acttgtcaaa cctaagcata tttgaatatg 1700
 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750
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<210> 36

<211> 204

<212> PRT

<213> Homo sapiens

<400> 36

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Cys | Gly | Gly | Phe | Ala | Cys | Ser | Lys | Asn | Cys | Leu | Cys | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Asn | Leu | Leu | Tyr | Thr | Leu | Val | Ser | Leu | Leu | Leu | Ile | Gly | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ala | Trp | Gly | Ile | Gly | Phe | Gly | Leu | Ile | Ser | Ser | Leu | Arg | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Gly | Val | Val | Ile | Ala | Val | Gly | Ile | Phe | Leu | Phe | Leu | Ile | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Val | Gly | Leu | Ile | Gly | Ala | Val | Lys | His | His | Gln | Val | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Phe | Tyr | Met | Ile | Ile | Leu | Leu | Leu | Val | Phe | Ile | Val | Gln | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Val | Ser | Cys | Ala | Cys | Leu | Ala | Leu | Asn | Gln | Glu | Gln | Gln | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Leu | Glu | Val | Gly | Trp | Asn | Asn | Thr | Ala | Ser | Ala | Arg | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Ile | Gln | Arg | Asn | Leu | Asn | Cys | Cys | Gly | Phe | Arg | Ser | Val | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Asn | Asp | Thr | Cys | Leu | Ala | Ser | Cys | Val | Lys | Ser | Asp | His | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Cys | Ser | Pro | Cys | Ala | Pro | Ile | Ile | Gly | Glu | Tyr | Ala | Gly | Glu | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Arg | Phe | Val | Gly | Gly | Ile | Gly | Leu | Phe | Phe | Ser | Phe | Thr | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ile | Leu | Gly | Val | Trp | Leu | Thr | Tyr | Arg | Tyr | Arg | Asn | Gln | Lys | Asp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Pro | Arg | Ala | Asn | Pro | Ser | Ala | Phe | Leu | | | | | | |
| | | | | 200 | | | | | | | | | | |

<210> 37
 <211> 390
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336
 <223> unknown base

<400> 37
 tgattggagc tgtaaaaaan tcttcaggtg ttgtnatttt tttatatgat 50
 tattctgtaa nttgtattta ttgttcagtt ttntgtatct tgcgcttggt 100
 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tgggttggaac 150
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
 gtgaccactn gtgctcgcca tgtgctccaa tcataggaga atatgctgga 300
 gaggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350
 gatcctgggt gtttggtgta cctacagata caggaaccag 390

<210> 38
 <211> 566
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 27

<223> unknown base

<400> 38

aatcccaaat tccccaattt ttttggncctt tttagggaaa gatgtgttgt 50
ggtaaaaagt gttagtataa aaatgataat ttacttgtag tcttttatga 100
ttacaccaat gtattctaga atagttatgt cttaggaaat tgtggtttta 150
tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200
tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgcg 350
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450
gcatatttga atatgatctc ccataatttg aaattgaaat cgtatttgtgt 500
ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550
gttgtgcccc acttgc 566

<210> 39

<211> 264

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 84-85, 206

<223> unknown base

<400> 39

atgattattc tgttacttgt atttattgtt cagttttatg gtatcttgcg 50
cttgttttagc ccctgaaacc aggagcaaca gggnnacagct tcctggaggt 100
tggttggcaa caatcacggc caagtgactc cgcaaatgac atcccagaga 150
aatcctaaac tgctgtgggt tccgaagtgt taacccaaat gacacctgtc 200
tggtctngctg tggttaaaagt gaccactcgt gctcgccatg tgctccaatc 250
ataggagaat atgc 264

<210> 40

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 40
accacgtct gcgttgctgc c 21

<210> 41
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 41
gagaatatgc tggagagg 18

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 42
aggaatgcac taggattcgc gcgg 24

<210> 43
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 43
ggccccaaag gcaaggacaa agcagctgtc agggaacctc cgccg 45

<210> 44
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 44
cagtcaccat gaagctgggc tgtgtcctca tggcctgggc cctctacctt 50
tcccttggtg tgctctgggt ggcccagatg ctactggctg ccagttttga 100
gacgctgcag tgtgaggagac ctgtctgcac tgaggagagc agctgccaca 150
cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200
tacactttca gtgaaccctt ccacctgatt gtgtcctatg actggctgat 250
cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300
gctgccaggc ctggcaagac tggccactga ctcaggtgac cttctaccga 350

gatggctcag ctctgggtcc ccccgggcct aacaggggaat tctccatcac 400
cgtggtacaa aaggcagaca gcgggcacta ccactgcagt ggcattcttc 450
agagccctgg tcttgggatc ccagaaacag catctgttgt ggctatcaca 500
gtccaagaac tgtttccagc gccaatctc agagctgtac cctcagctga 550
acccaagca ggaagcccca tgaccctgag ttgtcagaca aagttgcccc 600
tgcagaggtc agctgcccgc ctctcttct ccttctacaa ggatggaagg 650
atagtgcaaa gcagggggct ctctcagaa ttccagatcc ccacagcttc 700
agaagatcac tccgggtcat actggtgtga ggcagccact gaggacaacc 750
aagtttgaa acagagcccc cagctagaga tcagagtga gggtgcttc 800
agctctgtg cacctccac attgaatcca gctctcaga aatcagctgc 850
tccaggaact gctctgagg agggccctgg gcctctgct ccgccgcaa 900
ccccatcttc tgaggatcca ggcttttct ctctctggg gatgccagat 950
cctcatctgt atcaccagat gggccttct ctcaaacaca tgcaggatgt 1000
gagagtcctc ctcggtcacc tgctcatgga gttgagggaa ttatctggcc 1050
accagaagcc tgggaccaca aaggctactg ctgaatagaa gtaaacagtt 1100
catccatgat ctacttaac caccccaata aatctgattc tttattttct 1150
cttctgtcc tgcacatat cataagtact tttacaagtt gtcccagtg 1200
tttgttagaa taatgtagt aggtgagtgt aaataaatt atataaagt 1250
agaattagag tttagctata attgtgtatt ctctctaac acaacagaat 1300
tctgctgtct agatcaggaa tttctatctg ttatatcgac cagaatgttg 1350
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ggtcattata cttggggggg tgggggatgg tgggatgtgt gtctactggc 1500
atccagtaaa tagaagccag gggtgccgct aaacatccta taatgcacag 1550
ggcagtaccc cacaacgaaa aataatctgg cccaaaatgt cagttgtact 1600
gagtttgaga aacccagcc taatgaaacc ctaggtgttg ggctctggaa 1650
tgggactttg tcccttctaa ttattatctc tttccagcct cattcagcta 1700
ttcttactga cataccagtc tttagctggg gctatggtct gttctttagt 1750
tctagtttgt atccctcaa aagccattat gttgaaatcc taatcccaa 1800

ggtgatggca ttaagaagtg ggcctttggg aagtgattag atcaggagtg 1850
 cagagccctc atgattagga ttagtgccct tatttaaaaa ggccccagag 1900
 agctaactca cccttcacc atatgaggac gtggcaagaa gatgacatgt 1950
 atgagaacca aaaaacagct gtcgccaac accgactctg tcgttgccct 2000
 gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050
 ttgtagccta a 2061

<210> 45
 <211> 359
 <212> PRT
 <213> Homo sapiens

<400> 45
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 Leu Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe
 20 25 30
 Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser
 35 40 45
 Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe
 50 55 60
 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val
 65 70 75
 Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe
 80 85 90
 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp
 95 100 105
 Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly
 110 115 120
 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys
 125 130 135
 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro
 140 145 150
 Gly Pro Gly Ile Pro Glu Thr Ala Ser Val Val Ala Ile Thr Val
 155 160 165
 Gln Glu Leu Phe Pro Ala Pro Ile Leu Arg Ala Val Pro Ser Ala
 170 175 180
 Glu Pro Gln Ala Gly Ser Pro Met Thr Leu Ser Cys Gln Thr Lys
 185 190 195

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Gln | Arg | Ser | Ala | Ala | Arg | Leu | Leu | Phe | Ser | Phe | Tyr | 200 | 205 | 210 |
| Lys | Asp | Gly | Arg | Ile | Val | Gln | Ser | Arg | Gly | Leu | Ser | Ser | Glu | Phe | 215 | 220 | 225 |
| Gln | Ile | Pro | Thr | Ala | Ser | Glu | Asp | His | Ser | Gly | Ser | Tyr | Trp | Cys | 230 | 235 | 240 |
| Glu | Ala | Ala | Thr | Glu | Asp | Asn | Gln | Val | Trp | Lys | Gln | Ser | Pro | Gln | 245 | 250 | 255 |
| Leu | Glu | Ile | Arg | Val | Gln | Gly | Ala | Ser | Ser | Ser | Ala | Ala | Pro | Pro | 260 | 265 | 270 |
| Thr | Leu | Asn | Pro | Ala | Pro | Gln | Lys | Ser | Ala | Ala | Pro | Gly | Thr | Ala | 275 | 280 | 285 |
| Pro | Glu | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Pro | Pro | Pro | Thr | Pro | Ser | 290 | 295 | 300 |
| Ser | Glu | Asp | Pro | Gly | Phe | Ser | Ser | Pro | Leu | Gly | Met | Pro | Asp | Pro | 305 | 310 | 315 |
| His | Leu | Tyr | His | Gln | Met | Gly | Leu | Leu | Leu | Lys | His | Met | Gln | Asp | 320 | 325 | 330 |
| Val | Arg | Val | Leu | Leu | Gly | His | Leu | Leu | Met | Glu | Leu | Arg | Glu | Leu | 335 | 340 | 345 |
| Ser | Gly | His | Gln | Lys | Pro | Gly | Thr | Thr | Lys | Ala | Thr | Ala | Glu | | 350 | 355 | |

<210> 46
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 46
 tgggctgtgt cctcatgg 18

<210> 47
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 47
 tttccagcgc caattctc 18

<210> 48

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 48
agttcttgga ctgtgatagc cac 23

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 49
aaacttggtt gtcctcagtg gctg 24

<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 50
gtgagggacc tgtctgcact gaggagagca gctgccacac ggagg 45

<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 51
cccacgcgtc cgcccacgcg tccgcccacg ggtccgcca cgcgtccggg 50
ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100
gaagtagctc tggctgtgat ggggatctta ctgggcctgc tactcctggg 150
gcacctaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200
gtgtaacagg accttgga aa ggggatgtga atcttcctg cacctatgac 250
cccctgcaag gctacacca agtcttggtg aagtggctgg tacaacgtgg 300
ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350
agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa ggttccagga 400
gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450
cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500

ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550
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ataagcaaca gactaataac caggaaccca tcaaagtagc aaccctaagt 700
accttactct tcaagcctgc ggtgatagcc gactcaggct cctatttctg 750
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ggactggacc actgacatgg atggctacct tggagagacc agtgctgggc 950
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ccaacaagag catgtctacg aagcagccag gtaagaaagt ctctcctctt 1100
ccatttttga ccccgccct gccctcaatt ttgattactg gcaggaaatg 1150
tggaggaagg ggggtgtggc acagacccaa tctaaggcc ggaggccttc 1200
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tcagtccctg ctttctgcat ggccttcttc cctgctacct ctcttccctg 1750
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ctttgccctg gaatttgcca gatgcatctc aagtaagcca gctgctggat 1850
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tctaaatacc agagggaaga tgcccatagc actaggactt ggtcatcatg 1950
cctacagaca ctattcaact ttggcatctt gccaccagaa gacccgaggg 2000
aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050
ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100
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tggtgctcaa taaatatcta atcataacag c 2181

<210> 52

<211> 321

<212> PRT

<213> Homo sapiens

<400> 52

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Ile | Leu | Leu | Gly | Leu | Leu | Leu | Leu | Gly | His | Leu | Thr | Val | 1 | 5 | 10 | 15 |
| Asp | Thr | Tyr | Gly | Arg | Pro | Ile | Leu | Glu | Val | Pro | Glu | Ser | Val | Thr | 20 | 25 | 30 | |
| Gly | Pro | Trp | Lys | Gly | Asp | Val | Asn | Leu | Pro | Cys | Thr | Tyr | Asp | Pro | 35 | 40 | 45 | |
| Leu | Gln | Gly | Tyr | Thr | Gln | Val | Leu | Val | Lys | Trp | Leu | Val | Gln | Arg | 50 | 55 | 60 | |
| Gly | Ser | Asp | Pro | Val | Thr | Ile | Phe | Leu | Arg | Asp | Ser | Ser | Gly | Asp | 65 | 70 | 75 | |
| His | Ile | Gln | Gln | Ala | Lys | Tyr | Gln | Gly | Arg | Leu | His | Val | Ser | His | 80 | 85 | 90 | |
| Lys | Val | Pro | Gly | Asp | Val | Ser | Leu | Gln | Leu | Ser | Thr | Leu | Glu | Met | 95 | 100 | 105 | |
| Asp | Asp | Arg | Ser | His | Tyr | Thr | Cys | Glu | Val | Thr | Trp | Gln | Thr | Pro | 110 | 115 | 120 | |
| Asp | Gly | Asn | Gln | Val | Val | Arg | Asp | Lys | Ile | Thr | Glu | Leu | Arg | Val | 125 | 130 | 135 | |
| Gln | Lys | Leu | Ser | Val | Ser | Lys | Pro | Thr | Val | Thr | Thr | Gly | Ser | Gly | 140 | 145 | 150 | |
| Tyr | Gly | Phe | Thr | Val | Pro | Gln | Gly | Met | Arg | Ile | Ser | Leu | Gln | Cys | 155 | 160 | 165 | |
| Gln | Ala | Arg | Gly | Ser | Pro | Pro | Ile | Ser | Tyr | Ile | Trp | Tyr | Lys | Gln | 170 | 175 | 180 | |
| Gln | Thr | Asn | Asn | Gln | Glu | Pro | Ile | Lys | Val | Ala | Thr | Leu | Ser | Thr | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Phe | Lys | Pro | Ala | Val | Ile | Ala | Asp | Ser | Gly | Ser | Tyr | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Cys | Thr | Ala | Lys | Gly | Gln | Val | Gly | Ser | Glu | Gln | His | Ser | Asp | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Val | Lys | Phe | Val | Val | Lys | Asp | Ser | Ser | Lys | Leu | Leu | Lys | Thr | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Glu | Ala | Pro | Thr | Thr | Met | Thr | Tyr | Pro | Leu | Lys | Ala | Thr | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Thr | Val | Lys | Gln | Ser | Trp | Asp | Trp | Thr | Thr | Asp | Met | Asp | Gly | Tyr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Gly | Glu | Thr | Ser | Ala | Gly | Pro | Gly | Lys | Ser | Leu | Pro | Val | Phe |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ala | Ile | Ile | Leu | Ile | Ile | Ser | Leu | Cys | Cys | Met | Val | Val | Phe | Thr |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Met | Ala | Tyr | Ile | Met | Leu | Cys | Arg | Lys | Thr | Ser | Gln | Gln | Glu | His |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Val | Tyr | Glu | Ala | Ala | Arg | | | | | | | | | |
| | | | | 320 | | | | | | | | | | |

<210> 53
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 53
 tatccctcca attgagcacc ctgg 24

<210> 54
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 54
 gtcggaagac atcccaacaa g 21

<210> 55
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 55
cttcacaatg tcgctgtgct gctc 24

<210> 56
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 56
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<210> 57
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<212> DNA
<213> Homo sapiens

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<210> 59

<211> 373

<212> PRT

<213> Homo sapiens

<400> 59

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Leu | Leu | Leu | Leu | Leu | Leu | Leu | Val | Ser | Tyr | Tyr | Val | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Thr | Leu | Gly | Thr | His | Thr | Glu | Ile | Lys | Arg | Val | Ala | Glu | Glu | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Thr | Leu | Pro | Cys | His | His | Gln | Leu | Gly | Leu | Pro | Glu | Lys | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Leu | Asp | Ile | Glu | Trp | Leu | Leu | Thr | Asp | Asn | Glu | Gly | Asn | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Val | Val | Ile | Thr | Tyr | Ser | Ser | Arg | His | Val | Tyr | Asn | Asn | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Glu | Glu | Gln | Lys | Gly | Arg | Val | Ala | Phe | Ala | Ser | Asn | Phe | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ala | Gly | Asp | Ala | Ser | Leu | Gln | Ile | Glu | Pro | Leu | Lys | Pro | Ser | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Gly | Arg | Tyr | Thr | Cys | Lys | Val | Lys | Asn | Ser | Gly | Arg | Tyr | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Trp | Ser | His | Val | Ile | Leu | Lys | Val | Leu | Val | Arg | Pro | Ser | Lys | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Cys | Glu | Leu | Glu | Gly | Glu | Leu | Thr | Glu | Gly | Ser | Asp | Leu | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Gln | Cys | Glu | Ser | Ser | Ser | Gly | Thr | Glu | Pro | Ile | Val | Tyr | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Trp | Gln | Arg | Ile | Arg | Glu | Lys | Glu | Gly | Glu | Asp | Glu | Arg | Leu | Pro |

| | 170 | | 175 | | 180 |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Pro Lys Ser Arg | Ile Asp Tyr Asn His | Pro Gly Arg Val Leu Leu | | | |
| | 185 | 190 | | 195 | |
| Gln Asn Leu Thr | Met Ser Tyr Ser Gly | Leu Tyr Gln Cys Thr Ala | | | |
| | 200 | 205 | | 210 | |
| Gly Asn Glu Ala | Gly Lys Glu Ser Cys | Val Val Arg Val Thr Val | | | |
| | 215 | 220 | | 225 | |
| Gln Tyr Val Gln | Ser Ile Gly Met Val | Ala Gly Ala Val Thr Gly | | | |
| | 230 | 235 | | 240 | |
| Ile Val Ala Gly | Ala Leu Leu Ile Phe | Leu Leu Val Trp Leu Leu | | | |
| | 245 | 250 | | 255 | |
| Ile Arg Arg Lys | Asp Lys Glu Arg Tyr | Glu Glu Glu Glu Arg Pro | | | |
| | 260 | 265 | | 270 | |
| Asn Glu Ile Arg | Glu Asp Ala Glu Ala | Pro Lys Ala Arg Leu Val | | | |
| | 275 | 280 | | 285 | |
| Lys Pro Ser Ser | Ser Ser Ser Gly Ser | Arg Ser Ser Arg Ser Gly | | | |
| | 290 | 295 | | 300 | |
| Ser Ser Ser Thr | Arg Ser Thr Ala Asn | Ser Ala Ser Arg Ser Gln | | | |
| | 305 | 310 | | 315 | |
| Arg Thr Leu Ser | Thr Asp Ala Ala Pro | Gln Pro Gly Leu Ala Thr | | | |
| | 320 | 325 | | 330 | |
| Gln Ala Tyr Ser | Leu Val Gly Pro Glu | Val Arg Gly Ser Glu Pro | | | |
| | 335 | 340 | | 345 | |
| Lys Lys Val His | His Ala Asn Leu Thr | Lys Ala Glu Thr Thr Pro | | | |
| | 350 | 355 | | 360 | |
| Ser Met Ile Pro | Ser Gln Ser Arg Ala | Phe Gln Thr Val | | | |
| | 365 | 370 | | | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 60

ccagtgcaca gcaggcaacg aagc 24

<210> 61

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 61

actaggctgt atgcctgggt gggc 24

<210> 62

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 62

gtatgtacaa agcatcggca tggttgcagg agcagtgaca ggc 43

<210> 63

<211> 3534

<212> DNA

<213> Homo sapiens

<400> 63

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<210> 64

<211> 655

<212> PRT

<213> Homo sapiens

<400> 64

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| Met | Gly | Thr | Ser | Pro | Ser | Ser | Ser | Thr | Ala | Leu | Ala | Ser | Cys | Ser | | 1 | 5 | 10 | 15 |
| Arg | Ile | Ala | Arg | Arg | Ala | Thr | Ala | Thr | Met | Ile | Ala | Gly | Ser | Leu | | 20 | 25 | 30 | |
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | | 35 | 40 | 45 | |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | | 50 | 55 | 60 | |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | | 65 | 70 | 75 | |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | | 80 | 85 | 90 | |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | | 95 | 100 | 105 | |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | | 110 | 115 | 120 | |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | | 125 | 130 | 135 | |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | | 140 | 145 | 150 | |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | | 155 | 160 | 165 | |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | | 170 | 175 | 180 | |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | | 185 | 190 | 195 | |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | | 200 | 205 | 210 | |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | | 215 | 220 | 225 | |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | | 230 | 235 | 240 | |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | | 245 | 250 | 255 | |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | | 260 | 265 | 270 | |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | | 275 | 280 | 285 | |

| | | | |
|---|-----|-----|-----|
| Glu Asp Val Asn Lys Thr Leu Pro Asn Leu Gln Val Val Asn His | 290 | 295 | 300 |
| Gln Gln Gly Pro His His Arg His Ile Leu Lys Leu Leu Pro Ser | 305 | 310 | 315 |
| Met Glu Ala Thr Gly Gly Glu Lys Ser Ser Thr Pro Ile Lys Gly | 320 | 325 | 330 |
| Pro Lys Arg Gly His Pro Arg Gln Asn Leu His Lys His Phe Asp | 335 | 340 | 345 |
| Ile Asn Glu His Leu Pro Trp Met Ile Val Leu Phe Leu Leu Leu | 350 | 355 | 360 |
| Val Leu Val Val Ile Val Val Cys Ser Ile Arg Lys Ser Ser Arg | 365 | 370 | 375 |
| Thr Leu Lys Lys Gly Pro Arg Gln Asp Pro Ser Ala Ile Val Glu | 380 | 385 | 390 |
| Lys Ala Gly Leu Lys Lys Ser Met Thr Pro Thr Gln Asn Arg Glu | 395 | 400 | 405 |
| Lys Trp Ile Tyr Tyr Cys Asn Gly His Gly Ile Asp Ile Leu Lys | 410 | 415 | 420 |
| Leu Val Ala Ala Gln Val Gly Ser Gln Trp Lys Asp Ile Tyr Gln | 425 | 430 | 435 |
| Phe Leu Cys Asn Ala Ser Glu Arg Glu Val Ala Ala Phe Ser Asn | 440 | 445 | 450 |
| Gly Tyr Thr Ala Asp His Glu Arg Ala Tyr Ala Ala Leu Gln His | 455 | 460 | 465 |
| Trp Thr Ile Arg Gly Pro Glu Ala Ser Leu Ala Gln Leu Ile Ser | 470 | 475 | 480 |
| Ala Leu Arg Gln His Arg Arg Asn Asp Val Val Glu Lys Ile Arg | 485 | 490 | 495 |
| Gly Leu Met Glu Asp Thr Thr Gln Leu Glu Thr Asp Lys Leu Ala | 500 | 505 | 510 |
| Leu Pro Met Ser Pro Ser Pro Leu Ser Pro Ser Pro Ile Pro Ser | 515 | 520 | 525 |
| Pro Asn Ala Lys Leu Glu Asn Ser Ala Leu Leu Thr Val Glu Pro | 530 | 535 | 540 |
| Ser Pro Gln Asp Lys Asn Lys Gly Phe Phe Val Asp Glu Ser Glu | 545 | 550 | 555 |
| Pro Leu Leu Arg Cys Asp Ser Thr Ser Ser Gly Ser Ser Ala Leu | 560 | 565 | 570 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Arg | Asn | Gly | Ser | Phe | Ile | Thr | Lys | Glu | Lys | Lys | Asp | Thr | Val | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| | | | | | | | | | | | | | | | |
| Leu | Arg | Gln | Val | Arg | Leu | Asp | Pro | Cys | Asp | Leu | Gln | Pro | Ile | Phe | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| | | | | | | | | | | | | | | | |
| Asp | Asp | Met | Leu | His | Phe | Leu | Asn | Pro | Glu | Glu | Leu | Arg | Val | Ile | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| | | | | | | | | | | | | | | | |
| Glu | Glu | Ile | Pro | Gln | Ala | Glu | Asp | Lys | Leu | Asp | Arg | Leu | Phe | Glu | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| | | | | | | | | | | | | | | | |
| Ile | Ile | Gly | Val | Lys | Ser | Gln | Glu | Ala | Ser | Gln | Thr | Leu | Leu | Asp | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| | | | | | | | | | | | | | | | |
| Ser | Val | Tyr | Ser | His | Leu | Pro | Asp | Leu | Leu | | | | | | |
| | | | | 650 | | | | 655 | | | | | | | |

<210> 65

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 65

gtagcagtgc acatgggggtg ttgg 24

<210> 66

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 66

accgcacatc ctcaagtctct gtcc 24

<210> 67

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 67

acgatgatcg cgggctccct tctcctgctt ggattcctta gcaccaccac 50

<210> 68

<211> 2412

<212> DNA

<213> Homo sapiens

<400> 68

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ttgaagcccc cttctcattc cgatcgcttt ttggccttga tgatttgaaa 200
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<210> 69

<211> 453

<212> PRT

<213> Homo sapiens

<400> 69

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Glu | Asn | Asp | Pro | Pro | Ala | Val | Glu | Ala | Pro | Phe | Ser | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Leu | Phe | Gly | Leu | Asp | Asp | Leu | Lys | Ile | Ser | Pro | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Ala | Asp | Ala | Val | Ala | Ala | Gln | Ile | Leu | Ser | Leu | Leu | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

Leu Lys Phe Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile

| 50 | | | | | | | | | | 55 | | | | | 60 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Ala | Leu | Ala | Ile | Gly | Leu | Gly | Ile | His | Phe | Asp | Cys | Ser | Gly | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Lys | Tyr | Arg | Cys | Arg | Ser | Ser | Phe | Lys | Cys | Ile | Glu | Leu | Ile | Ala | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Arg | Cys | Asp | Gly | Val | Ser | Asp | Cys | Lys | Asp | Gly | Glu | Asp | Glu | Tyr | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Arg | Cys | Val | Arg | Val | Gly | Gly | Gln | Asn | Ala | Val | Leu | Gln | Val | Phe | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Thr | Ala | Ala | Ser | Trp | Lys | Thr | Met | Cys | Ser | Asp | Asp | Trp | Lys | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| His | Tyr | Ala | Asn | Val | Ala | Cys | Ala | Gln | Leu | Gly | Phe | Pro | Ser | Tyr | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Val | Ser | Ser | Asp | Asn | Leu | Arg | Val | Ser | Ser | Leu | Glu | Gly | Gln | Phe | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Arg | Glu | Glu | Phe | Val | Ser | Ile | Asp | His | Leu | Leu | Pro | Asp | Asp | Lys | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Val | Thr | Ala | Leu | His | His | Ser | Val | Tyr | Val | Arg | Glu | Gly | Cys | Ala | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ser | Gly | His | Val | Val | Thr | Leu | Gln | Cys | Thr | Ala | Cys | Gly | His | Arg | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Arg | Gly | Tyr | Ser | Ser | Arg | Ile | Val | Gly | Gly | Asn | Met | Ser | Leu | Leu | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ser | Gln | Trp | Pro | Trp | Gln | Ala | Ser | Leu | Gln | Phe | Gln | Gly | Tyr | His | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Cys | Gly | Gly | Ser | Val | Ile | Thr | Pro | Leu | Trp | Ile | Ile | Thr | Ala | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ala | His | Cys | Val | Tyr | Asp | Leu | Tyr | Leu | Pro | Lys | Ser | Trp | Thr | Ile | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gln | Val | Gly | Leu | Val | Ser | Leu | Leu | Asp | Asn | Pro | Ala | Pro | Ser | His | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Leu | Val | Glu | Lys | Ile | Val | Tyr | His | Ser | Lys | Tyr | Lys | Pro | Lys | Arg | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Gly | Asn | Asp | Ile | Ala | Leu | Met | Lys | Leu | Ala | Gly | Pro | Leu | Thr | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Phe | Asn | Glu | Met | Ile | Gln | Pro | Val | Cys | Leu | Pro | Asn | Ser | Glu | Glu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Asn | Phe | Pro | Asp | Gly | Lys | Val | Cys | Trp | Thr | Ser | Gly | Trp | Gly | Ala | | | | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 335 | | 340 | | 345 |
| Thr Glu Asp Gly Gly Asp Ala Ser Pro Val Leu Asn His Ala Ala | | | | | |
| | 350 | | 355 | | 360 |
| Val Pro Leu Ile Ser Asn Lys Ile Cys Asn His Arg Asp Val Tyr | | | | | |
| | 365 | | 370 | | 375 |
| Gly Gly Ile Ile Ser Pro Ser Met Leu Cys Ala Gly Tyr Leu Thr | | | | | |
| | 380 | | 385 | | 390 |
| Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val | | | | | |
| | 395 | | 400 | | 405 |
| Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe | | | | | |
| | 410 | | 415 | | 420 |
| Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg | | | | | |
| | 425 | | 430 | | 435 |
| Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp | | | | | |
| | 440 | | 445 | | 450 |

Leu Lys Thr

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

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<210> 71

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 71

tacacgtccc tgtggttgca gatc 24

<210> 72

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 72

cggttcaatgc agaaatgatc cagcctgtgt gcctgcccaa ctctgaagag 50

<210> 73

<211> 3305

<212> DNA

<213> Homo sapiens

<400> 73

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gctcagcggc ggcgcgggcg ctgcgcgagg gctccggagc tgactcgccg 200
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 gaaat 3305

<210> 74

<211> 735

<212> PRT

<213> Homo sapiens

<400> 74

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| Met | Ala | Ala | Arg | Pro | Leu | Pro | Val | Ser | Pro | Ala | Arg | Ala | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Ala | Leu | Ala | Gly | Ala | Leu | Leu | Ala | Pro | Cys | Glu | Ala | Arg | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Ser | Leu | Trp | Asn | Gln | Gly | Arg | Ala | Asp | Glu | Val | Val | Ser | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ser | Val | Arg | Ser | Gly | Asp | Leu | Trp | Ile | Pro | Val | Lys | Ser | Phe | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Lys | Asn | His | Pro | Glu | Val | Leu | Asn | Ile | Arg | Leu | Gln | Arg | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Lys | Glu | Leu | Ile | Ile | Asn | Leu | Glu | Arg | Asn | Glu | Gly | Leu | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ala | Ser | Ser | Phe | Thr | Glu | Thr | His | Tyr | Leu | Gln | Asp | Gly | Thr | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Ser | Leu | Ala | Arg | Asn | Tyr | Thr | Gly | His | Cys | Tyr | Tyr | His | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | |
|---|-----|-----|-----|
| His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys | 125 | 130 | 135 |
| Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val | 140 | 145 | 150 |
| Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro | 155 | 160 | 165 |
| Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His | 170 | 175 | 180 |
| Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser | 185 | 190 | 195 |
| Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr | 200 | 205 | 210 |
| Lys Tyr Val Glu Leu Val Ile Val Ala Asp Asn Arg Glu Phe Gln | 215 | 220 | 225 |
| Arg Gln Gly Lys Asp Leu Glu Lys Val Lys Gln Arg Leu Ile Glu | 230 | 235 | 240 |
| Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro Leu Asn Ile Arg | 245 | 250 | 255 |
| Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met Asp Lys Cys | 260 | 265 | 270 |
| Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe Leu Asp | 275 | 280 | 285 |
| Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn Ala | 290 | 295 | 300 |
| Gln Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met | 305 | 310 | 315 |
| Ala Pro Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile | 320 | 325 | 330 |
| Val Met Asp His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu | 335 | 340 | 345 |
| Ala His Glu Leu Gly His Asn Phe Gly Met Asn His Asp Thr Leu | 350 | 355 | 360 |
| Asp Arg Gly Cys Ser Cys Gln Met Ala Val Glu Lys Gly Gly Cys | 365 | 370 | 375 |
| Ile Met Asn Ala Ser Thr Gly Tyr Pro Phe Pro Met Val Phe Ser | 380 | 385 | 390 |
| Ser Cys Ser Arg Lys Asp Leu Glu Thr Ser Leu Glu Lys Gly Met | 395 | 400 | 405 |

| | | | |
|---|-----|-----|-----|
| Gly Val Cys Leu Phe Asn Leu Pro Glu Val Arg Glu Ser Phe Gly | 410 | 415 | 420 |
| Gly Gln Lys Cys Gly Asn Arg Phe Val Glu Glu Gly Glu Glu Cys | 425 | 430 | 435 |
| Asp Cys Gly Glu Pro Glu Glu Cys Met Asn Arg Cys Cys Asn Ala | 440 | 445 | 450 |
| Thr Thr Cys Thr Leu Lys Pro Asp Ala Val Cys Ala His Gly Leu | 455 | 460 | 465 |
| Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala Gly Thr Ala Cys Arg | 470 | 475 | 480 |
| Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe Cys Thr Gly Ala | 485 | 490 | 495 |
| Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp Gly His Ser | 500 | 505 | 510 |
| Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys Gln Thr | 515 | 520 | 525 |
| His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys Pro | 530 | 535 | 540 |
| Ala Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro | 545 | 550 | 555 |
| Tyr Gly Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys | 560 | 565 | 570 |
| Glu Met Arg Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly | 575 | 580 | 585 |
| Ala Ser Arg Pro Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr | 590 | 595 | 600 |
| Asn Ile Pro Leu Gln Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr | 605 | 610 | 615 |
| His Val Tyr Leu Gly Asp Asp Met Pro Asp Pro Gly Leu Val Leu | 620 | 625 | 630 |
| Ala Gly Thr Lys Cys Ala Asp Gly Lys Ile Cys Leu Asn Arg Gln | 635 | 640 | 645 |
| Cys Gln Asn Ile Ser Val Phe Gly Val His Glu Cys Ala Met Gln | 650 | 655 | 660 |
| Cys His Gly Arg Gly Val Cys Asn Asn Arg Lys Asn Cys His Cys | 665 | 670 | 675 |
| Glu Ala His Trp Ala Pro Pro Phe Cys Asp Lys Phe Gly Phe Gly | 680 | 685 | 690 |

Gly Ser Thr Asp Ser Gly Pro Ile Arg Gln Ala Glu Ala Arg Gln
695 700 705

Glu Ala Ala Glu Ser Asn Arg Glu Arg Gly Gln Gly Gln Glu Pro
710 715 720

Val Gly Ser Gln Glu His Ala Ser Thr Ala Ser Leu Thr Leu Ile
725 730 735

<210> 75

<211> 483

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 94, 143, 156, 163, 179, 193, 369, 371, 381, 390, 473

<223> unknown base

<400> 75

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agcaagggtt gggcccagtg tcccctttcc ccagtgcac ctcagccttg 350
gcagccctga taactggtnt ntggctgcaa nttaatgctn tgatatggct 400
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gagaccctgc caccattcc atntccatcc aag 483

<210> 76

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 76

gtctcagcac gtgttctggt ctcagg 27

<210> 77

<211> 18

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<400> 77
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<210> 78
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<212> DNA
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<220>
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<400> 78
tacctgcacg atgggcac 18

<210> 79
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<400> 79
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<210> 80
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<400> 80
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<210> 81
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<220>
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<400> 81
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cttcgctggg aagagtttg 19

<210> 83
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<210> 84
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<212> DNA
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 aaaaaaaaaa gccaaagtgc gtggctcacg cctgtaatcc cggcactttg 1450
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<210> 85
 <211> 67
 <212> PRT
 <213> Homo sapiens

<400> 85
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 Leu Ala Leu Leu Leu Pro Val Gln Val Ser Ser Phe Val Pro Leu
 20 25 30
 Thr Ser Met Pro Glu Ala Thr Ala Ala Glu Thr Thr Lys Pro Ser
 35 40 45
 Asn Ser Ala Leu Gln Pro Thr Ala Gly Leu Leu Val Val Leu Leu
 50 55 60
 Ala Leu Leu His Leu Tyr His
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<210> 86
 <211> 23

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 86
acgggcacac tggatcccaa atg 23

<210> 87
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 87
ggtagagatg tagaaggga agcaagacc 29

<210> 88
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 88
gctccctacc cgtgcaggtt tcttcatttg ttcctttaac cagtatgccg 50

<210> 89
<211> 2956
<212> DNA
<213> Homo sapiens

<400> 89
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gctgctgctg ggccatggcg gcggcgggcg ctggggcgcc cgggcccagg 150
aggcggcggc ggcgcgggcg gacgggcccc ccgcggcaga cggcgaggac 200
ggacaggacc cgcacagcaa gcacctgtac acggccgaca tgttcacgca 250
cgggatccag agcgccgcgc acttcgtcat gttcttcgcg ccctggtgtg 300
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<210> 90
 <211> 432
 <212> PRT
 <213> Homo sapiens

<400> 90
 Met Pro Ala Arg Pro Gly Arg Leu Leu Pro Leu Leu Ala Arg Pro
 1 5 10 15
 Ala Ala Leu Thr Ala Leu Leu Leu Leu Leu Leu Gly His Gly Gly
 20 25 30
 Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala
 35 40 45

| | | | | | |
|-----------------|---|-------------------------|-----|-----|-----|
| Ala Asp Gly Pro | Pro Ala Ala Asp Gly | Glu Asp Gly Gln Asp Pro | 50 | 55 | 60 |
| His Ser Lys His | Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile | | 65 | 70 | 75 |
| Gln Ser Ala Ala | His Phe Val Met Phe Phe Ala Pro Trp Cys Gly | | 80 | 85 | 90 |
| His Cys Gln Arg | Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys | | 95 | 100 | 105 |
| Tyr Asn Ser Met | Glu Asp Ala Lys Val Tyr Val Ala Lys Val Asp | | 110 | 115 | 120 |
| Cys Thr Ala His | Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly | | 125 | 130 | 135 |
| Tyr Pro Thr Leu | Lys Leu Phe Lys Pro Gly Gln Glu Ala Val Lys | | 140 | 145 | 150 |
| Tyr Gln Gly Pro | Arg Asp Phe Gln Thr Leu Glu Asn Trp Met Leu | | 155 | 160 | 165 |
| Gln Thr Leu Asn | Glu Glu Pro Val Thr Pro Glu Pro Glu Val Glu | | 170 | 175 | 180 |
| Pro Pro Ser Ala | Pro Glu Leu Lys Gln Gly Leu Tyr Glu Leu Ser | | 185 | 190 | 195 |
| Ala Ser Asn Phe | Glu Leu His Val Ala Gln Gly Asp His Phe Ile | | 200 | 205 | 210 |
| Lys Phe Phe Ala | Pro Trp Cys Gly His Cys Lys Ala Leu Ala Pro | | 215 | 220 | 225 |
| Thr Trp Glu Gln | Leu Ala Leu Gly Leu Glu His Ser Glu Thr Val | | 230 | 235 | 240 |
| Lys Ile Gly Lys | Val Asp Cys Thr Gln His Tyr Glu Leu Cys Ser | | 245 | 250 | 255 |
| Gly Asn Gln Val | Arg Gly Tyr Pro Thr Leu Leu Trp Phe Arg Asp | | 260 | 265 | 270 |
| Gly Lys Lys Val | Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu Ser | | 275 | 280 | 285 |
| Leu Arg Glu Tyr | Val Glu Ser Gln Leu Gln Arg Thr Glu Thr Gly | | 290 | 295 | 300 |
| Ala Thr Glu Thr | Val Thr Pro Ser Glu Ala Pro Val Leu Ala Ala | | 305 | 310 | 315 |
| Glu Pro Glu Ala | Asp Lys Gly Thr Val Leu Ala Leu Thr Glu Asn | | 320 | 325 | 330 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Phe | Asp | Asp | Thr | Ile | Ala | Glu | Gly | Ile | Thr | Phe | Ile | Lys | Phe |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Tyr | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Thr | Leu | Ala | Pro | Thr | Trp |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Glu | Glu | Leu | Ser | Lys | Lys | Glu | Phe | Pro | Gly | Leu | Ala | Gly | Val | Lys |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Ile | Ala | Glu | Val | Asp | Cys | Thr | Ala | Glu | Arg | Asn | Ile | Cys | Ser | Lys |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Tyr | Ser | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Leu | Phe | Arg | Gly | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Lys | Lys | Val | Ser | Glu | His | Ser | Gly | Gly | Arg | Asp | Leu | Asp | Ser | Leu |
| | | | | 410 | | | | | 415 | | | | | 420 |
| His | Arg | Phe | Val | Leu | Ser | Gln | Ala | Lys | Asp | Glu | Leu | | | |
| | | | | 425 | | | | | 430 | | | | | |

<210> 91
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 91
 atgttcttctcg cgccctggtg 20

<210> 92
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 92
 ccaagccaac acactctaca g 21

<210> 93
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 93
 aagtggtcgc cttgtgcaac gtgc 24

<210> 94
 <211> 23

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 94
ggtcaaaggg gatatatcgc cac 23

<210> 95
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 95
gcatggaaga tgccaaagtc tatgtggcta aagtggactg cacggccca 49

<210> 96
<211> 1016
<212> DNA
<213> Homo sapiens

<400> 96
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gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150
atttcaccag gacccaaagg agatgatggg gaaaaaggag atccaggaga 200
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gagaactggg tgatatggga gatcagggca atattggcaa gactggggccc 300
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cgtgaatgac cttgaaaggg agggacagta catgtccaca gacaacactc 700
cactgcagaa ctatagcaac tggaatgagg gggaaaccag cgaccctat 750
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agagtgccat cttaccatgt actttgtctg tgagttcatc aagaagaaaa 850
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 cagttattgt tatccatcct ttttttctg attgtactac atttgatctg 950
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 aaaaaaaaaa aaaaaa 1016

<210> 97
 <211> 277
 <212> PRT
 <213> Homo sapiens

<400> 97
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 20 25 30
 Asp Ser Arg Pro Thr Ala Glu Val Cys Ala Thr His Thr Ile Ser
 35 40 45
 Pro Gly Pro Lys Gly Asp Asp Gly Glu Lys Gly Asp Pro Gly Glu
 50 55 60
 Glu Gly Lys His Gly Lys Val Gly Arg Met Gly Pro Lys Gly Ile
 65 70 75
 Lys Gly Glu Leu Gly Asp Met Gly Asp Gln Gly Asn Ile Gly Lys
 80 85 90
 Thr Gly Pro Ile Gly Lys Lys Gly Asp Lys Gly Glu Lys Gly Leu
 95 100 105
 Leu Gly Ile Pro Gly Glu Lys Gly Lys Ala Gly Thr Val Cys Asp
 110 115 120
 Cys Gly Arg Tyr Arg Lys Phe Val Gly Gln Leu Asp Ile Ser Ile
 125 130 135
 Ala Arg Leu Lys Thr Ser Met Lys Phe Val Lys Asn Val Ile Ala
 140 145 150
 Gly Ile Arg Glu Thr Glu Glu Lys Phe Tyr Tyr Ile Val Gln Glu
 155 160 165
 Glu Lys Asn Tyr Arg Glu Ser Leu Thr His Cys Arg Ile Arg Gly
 170 175 180
 Gly Met Leu Ala Met Pro Lys Asp Glu Ala Ala Asn Thr Leu Ile
 185 190 195
 Ala Asp Tyr Val Ala Lys Ser Gly Phe Phe Arg Val Phe Ile Gly

| | | | |
|---|-----|-----|-----|
| | 200 | 205 | 210 |
| Val Asn Asp Leu Glu Arg Glu Gly Gln Tyr Met Ser Thr Asp Asn | | | |
| | 215 | 220 | 225 |
| Thr Pro Leu Gln Asn Tyr Ser Asn Trp Asn Glu Gly Glu Pro Ser | | | |
| | 230 | 235 | 240 |
| Asp Pro Tyr Gly His Glu Asp Cys Val Glu Met Leu Ser Ser Gly | | | |
| | 245 | 250 | 255 |
| Arg Trp Asn Asp Thr Glu Cys His Leu Thr Met Tyr Phe Val Cys | | | |
| | 260 | 265 | 270 |
| Glu Phe Ile Lys Lys Lys Lys | | | |
| | 275 | | |

<210> 98

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 98

cgctgactat gttgccaaga gtgg 24

<210> 99

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 99

gatgatggag gctccatacc tcag 24

<210> 100

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 100

gtgttcattg gcgtgaatga ccttgaaagg gagggacagt acatgttcac 50

<210> 101

<211> 2574

<212> DNA

<213> Homo sapiens

<400> 101

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gagaagtctc agctagaacg agcggcccta ggttttcgga agggaggatc 200
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catggcccaa cttgtttatt gcag 2574

<210> 102

<211> 730

<212> PRT

<213> Homo sapiens

<400> 102

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Val | Cys | Gln | Arg | Thr | Arg | Ala | Pro | Trp | Lys | Glu | Lys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Glu | Arg | Ala | Ala | Leu | Gly | Phe | Arg | Lys | Gly | Gly | Ser | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Ala | Ser | Gly | Trp | Asn | Gln | Thr | Val | Pro | Ile | Glu | Glu | Ala | 35 | 40 | 45 |
| Gly | Ser | Met | Ala | Ala | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | 50 | 55 | 60 |
| Pro | Leu | Leu | Leu | Leu | Lys | Leu | His | Leu | Trp | Pro | Gln | Leu | Arg | Trp | 65 | 70 | 75 |
| Leu | Pro | Ala | Asp | Leu | Ala | Phe | Ala | Val | Arg | Ala | Leu | Cys | Cys | Lys | 80 | 85 | 90 |
| Arg | Ala | Leu | Arg | Ala | Arg | Ala | Leu | Ala | Ala | Ala | Ala | Ala | Asp | Pro | 95 | 100 | 105 |
| Glu | Gly | Pro | Glu | Gly | Gly | Cys | Ser | Leu | Ala | Trp | Arg | Leu | Ala | Glu | 110 | 115 | 120 |
| Leu | Ala | Gln | Gln | Arg | Ala | Ala | His | Thr | Phe | Leu | Ile | His | Gly | Ser | 125 | 130 | 135 |
| Arg | Arg | Phe | Ser | Tyr | Ser | Glu | Ala | Glu | Arg | Glu | Ser | Asn | Arg | Ala | 140 | 145 | 150 |
| Ala | Arg | Ala | Phe | Leu | Arg | Ala | Leu | Gly | Trp | Asp | Trp | Gly | Pro | Asp | 155 | 160 | 165 |
| Gly | Gly | Asp | Ser | Gly | Glu | Gly | Ser | Ala | Gly | Glu | Gly | Glu | Arg | Ala | 170 | 175 | 180 |
| Ala | Pro | Gly | Ala | Gly | Asp | Ala | Ala | Ala | Gly | Ser | Gly | Ala | Glu | Phe | 185 | 190 | 195 |
| Ala | Gly | Gly | Asp | Gly | Ala | Ala | Arg | Gly | Gly | Gly | Ala | Ala | Ala | Pro | 200 | 205 | 210 |
| Leu | Ser | Pro | Gly | Ala | Thr | Val | Ala | Leu | Leu | Leu | Pro | Ala | Gly | Pro | 215 | 220 | 225 |
| Glu | Phe | Leu | Trp | Leu | Trp | Phe | Gly | Leu | Ala | Lys | Ala | Gly | Leu | Arg | 230 | 235 | 240 |
| Thr | Ala | Phe | Val | Pro | Thr | Ala | Leu | Arg | Arg | Gly | Pro | Leu | Leu | His | 245 | 250 | 255 |
| Cys | Leu | Arg | Ser | Cys | Gly | Ala | Arg | Ala | Leu | Val | Leu | Ala | Pro | Glu | 260 | 265 | 270 |
| Phe | Leu | Glu | Ser | Leu | Glu | Pro | Asp | Leu | Pro | Ala | Leu | Arg | Ala | Met | 275 | 280 | 285 |
| Gly | Leu | His | Leu | Trp | Ala | Ala | Gly | Pro | Gly | Thr | His | Pro | Ala | Gly | 290 | 295 | 300 |
| Ile | Ser | Asp | Leu | Leu | Ala | Glu | Val | Ser | Ala | Glu | Val | Asp | Gly | Pro | 305 | 310 | 315 |

| | | | | |
|---|---|-----|-----|-----|
| Val Pro Gly Tyr | Leu Ser Ser Pro Gln Ser Ile Thr Asp Thr Cys | 320 | 325 | 330 |
| Leu Tyr Ile Phe Thr Ser Gly Thr Thr Gly Leu Pro Lys Ala Ala | | 335 | 340 | 345 |
| Arg Ile Ser His Leu Lys Ile Leu Gln Cys Gln Gly Phe Tyr Gln | | 350 | 355 | 360 |
| Leu Cys Gly Val His Gln Glu Asp Val Ile Tyr Leu Ala Leu Pro | | 365 | 370 | 375 |
| Leu Tyr His Met Ser Gly Ser Leu Leu Gly Ile Val Gly Cys Met | | 380 | 385 | 390 |
| Gly Ile Gly Ala Thr Val Val Leu Lys Ser Lys Phe Ser Ala Gly | | 395 | 400 | 405 |
| Gln Phe Trp Glu Asp Cys Gln Gln His Arg Val Thr Val Phe Gln | | 410 | 415 | 420 |
| Tyr Ile Gly Glu Leu Cys Arg Tyr Leu Val Asn Gln Pro Pro Ser | | 425 | 430 | 435 |
| Lys Ala Glu Arg Gly His Lys Val Arg Leu Ala Val Gly Ser Gly | | 440 | 445 | 450 |
| Leu Arg Pro Asp Thr Trp Glu Arg Phe Val Arg Arg Phe Gly Pro | | 455 | 460 | 465 |
| Leu Gln Val Leu Glu Thr Tyr Gly Leu Thr Glu Gly Asn Val Ala | | 470 | 475 | 480 |
| Thr Ile Asn Tyr Thr Gly Gln Arg Gly Ala Val Gly Arg Ala Ser | | 485 | 490 | 495 |
| Trp Leu Tyr Lys His Ile Phe Pro Phe Ser Leu Ile Arg Tyr Asp | | 500 | 505 | 510 |
| Val Thr Thr Gly Glu Pro Ile Arg Asp Pro Gln Gly His Cys Met | | 515 | 520 | 525 |
| Ala Thr Ser Pro Gly Glu Pro Gly Leu Leu Val Ala Pro Val Ser | | 530 | 535 | 540 |
| Gln Gln Ser Pro Phe Leu Gly Tyr Ala Gly Gly Pro Glu Leu Ala | | 545 | 550 | 555 |
| Gln Gly Lys Leu Leu Lys Asp Val Phe Arg Pro Gly Asp Val Phe | | 560 | 565 | 570 |
| Phe Asn Thr Gly Asp Leu Leu Val Cys Asp Asp Gln Gly Phe Leu | | 575 | 580 | 585 |
| Arg Phe His Asp Arg Thr Gly Asp Thr Phe Arg Trp Lys Gly Glu | | 590 | 595 | 600 |

| | | | |
|---|-----|-----|-----|
| Asn Val Ala Thr Thr Glu Val Ala Glu Val Phe Glu Ala Leu Asp | 605 | 610 | 615 |
| Phe Leu Gln Glu Val Asn Val Tyr Gly Val Thr Val Pro Gly His | 620 | 625 | 630 |
| Glu Gly Arg Ala Gly Met Ala Ala Leu Val Leu Arg Pro Pro His | 635 | 640 | 645 |
| Ala Leu Asp Leu Met Gln Leu Tyr Thr His Val Ser Glu Asn Leu | 650 | 655 | 660 |
| Pro Pro Tyr Ala Arg Pro Arg Phe Leu Arg Leu Gln Glu Ser Leu | 665 | 670 | 675 |
| Ala Thr Thr Glu Thr Phe Lys Gln Gln Lys Val Arg Met Ala Asn | 680 | 685 | 690 |
| Glu Gly Phe Asp Pro Ser Thr Leu Ser Asp Pro Leu Tyr Val Leu | 695 | 700 | 705 |
| Asp Gln Ala Val Gly Ala Tyr Leu Pro Leu Thr Thr Ala Arg Tyr | 710 | 715 | 720 |
| Ser Ala Leu Leu Ala Gly Asn Leu Arg Ile | 725 | 730 | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 104
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 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 105
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<210> 106

<211> 18

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~ <213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 106

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<211> 2579

<212> DNA

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ccggcgcgcg ctcccacctt tgccgcacac tccggcgagc cgagcccgc 200

gcgctccagg attctgcggc tcggaactcg gattgcagct ctgaaccccc 250

atggtggttt tttaaactc tcttttcctt ctcttctcgc ttttgattgc 300

accgtttcca tctgggggct agaggagcaa ggcagcagcc ttcccagcca 350

gcccttggtg gcttgccatc gtccatctgg cttataaaag tttgctgagc 400

gcagtccaga gggctgcgct gctcgtcccc tcggctggca gaaggggggtg 450

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<211> 555

<212> PRT

<213> Homo sapiens

<400> 109

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Ser | Trp | Ile | Gly | Ala | Val | Ile | Leu | Pro | Leu | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ser | Leu | Pro | Ala | Gly | Ala | Asp | Val | Lys | Ala | Arg | Ser | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Val | Arg | Gln | Ala | Tyr | Gly | Ala | Lys | Gly | Phe | Ser | Leu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ile | Pro | Tyr | Gln | Glu | Ile | Ala | Gly | Glu | His | Leu | Arg | Ile | Cys |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gln | Glu | Tyr | Thr | Cys | Cys | Thr | Thr | Glu | Met | Glu | Asp | Lys | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | |
|---|-----|-----|-----|
| Thr Gly Gly Asn Val Asn Leu Glu Glu Met Leu Asn Asp Phe Trp | 155 | 160 | 165 |
| Ala Arg Leu Leu Glu Arg Met Phe Gln Leu Ile Asn Pro Gln Tyr | 170 | 175 | 180 |
| His Phe Ser Glu Asp Tyr Leu Glu Cys Val Ser Lys Tyr Thr Asp | 185 | 190 | 195 |
| Gln Leu Lys Pro Phe Gly Asp Val Pro Arg Lys Leu Lys Ile Gln | 200 | 205 | 210 |
| Val Thr Arg Ala Phe Ile Ala Ala Arg Thr Phe Val Gln Gly Leu | 215 | 220 | 225 |
| Thr Val Gly Arg Glu Val Ala Asn Arg Val Ser Lys Val Ser Pro | 230 | 235 | 240 |
| Thr Pro Gly Cys Ile Arg Ala Leu Met Lys Met Leu Tyr Cys Pro | 245 | 250 | 255 |
| Tyr Cys Arg Gly Leu Pro Thr Val Arg Pro Cys Asn Asn Tyr Cys | 260 | 265 | 270 |
| Leu Asn Val Met Lys Gly Cys Leu Ala Asn Gln Ala Asp Leu Asp | 275 | 280 | 285 |
| Thr Glu Trp Asn Leu Phe Ile Asp Ala Met Leu Leu Val Ala Glu | 290 | 295 | 300 |
| Arg Leu Glu Gly Pro Phe Asn Ile Glu Ser Val Met Asp Pro Ile | 305 | 310 | 315 |
| Asp Val Lys Ile Ser Glu Ala Ile Met Asn Met Gln Glu Asn Ser | 320 | 325 | 330 |
| Met Gln Val Ser Ala Lys Val Phe Gln Gly Cys Gly Gln Pro Lys | 335 | 340 | 345 |
| Pro Ala Pro Ala Leu Arg Ser Ala Arg Ser Ala Pro Glu Asn Phe | 350 | 355 | 360 |
| Asn Thr Arg Phe Arg Pro Tyr Asn Pro Glu Glu Arg Pro Thr Thr | 365 | 370 | 375 |
| Ala Ala Gly Thr Ser Leu Asp Arg Leu Val Thr Asp Ile Lys Glu | 380 | 385 | 390 |
| Lys Leu Lys Leu Ser Lys Lys Val Trp Ser Ala Leu Pro Tyr Thr | 395 | 400 | 405 |
| Ile Cys Lys Asp Glu Ser Val Thr Ala Gly Thr Ser Asn Glu Glu | 410 | 415 | 420 |
| Glu Cys Trp Asn Gly His Ser Lys Ala Arg Tyr Leu Pro Glu Ile | 425 | 430 | 435 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Asp | Gly | Leu | Thr | Asn | Gln | Ile | Asn | Asn | Pro | Glu | Val | Asp |
| | | | | 440 | | | | | 445 | | | | | 450 |
| | | | | | | | | | | | | | | |
| Val | Asp | Ile | Thr | Arg | Pro | Asp | Thr | Phe | Ile | Arg | Gln | Gln | Ile | Met |
| | | | | 455 | | | | | 460 | | | | | 465 |
| | | | | | | | | | | | | | | |
| Ala | Leu | Arg | Val | Met | Thr | Asn | Lys | Leu | Lys | Asn | Ala | Tyr | Asn | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| | | | | | | | | | | | | | | |
| Asn | Asp | Val | Asn | Phe | Gln | Asp | Thr | Ser | Asp | Glu | Ser | Ser | Gly | Ser |
| | | | | 485 | | | | | 490 | | | | | 495 |
| | | | | | | | | | | | | | | |
| Gly | Ser | Gly | Ser | Gly | Cys | Met | Asp | Asp | Val | Cys | Pro | Thr | Glu | Phe |
| | | | | 500 | | | | | 505 | | | | | 510 |
| | | | | | | | | | | | | | | |
| Glu | Phe | Val | Thr | Thr | Glu | Ala | Pro | Ala | Val | Asp | Pro | Asp | Arg | Arg |
| | | | | 515 | | | | | 520 | | | | | 525 |
| | | | | | | | | | | | | | | |
| Glu | Val | Asp | Ser | Ser | Ala | Ala | Gln | Arg | Gly | His | Ser | Leu | Leu | Ser |
| | | | | 530 | | | | | 535 | | | | | 540 |
| | | | | | | | | | | | | | | |
| Trp | Ser | Leu | Thr | Cys | Ile | Val | Leu | Ala | Leu | Gln | Arg | Leu | Cys | Arg |
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<210> 114

<211> 515

<212> PRT

<213> Homo sapiens

<400> 114

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| Met | Ala | Pro | Arg | Gly | Cys | Ala | Gly | His | Pro | Pro | Pro | Pro | Ser | Pro | 1 | 5 | 10 | 15 |
| Gln | Ala | Cys | Val | Cys | Pro | Gly | Lys | Met | Leu | Ala | Met | Gly | Ala | Leu | 20 | 25 | 30 | |
| Ala | Gly | Phe | Trp | Ile | Leu | Cys | Leu | Leu | Thr | Tyr | Gly | Tyr | Leu | Ser | 35 | 40 | 45 | |
| Trp | Gly | Gln | Ala | Leu | Glu | Glu | Glu | Glu | Glu | Gly | Ala | Leu | Leu | Ala | 50 | 55 | 60 | |
| Gln | Ala | Gly | Glu | Lys | Leu | Glu | Pro | Ser | Thr | Thr | Ser | Thr | Ser | Gln | 65 | 70 | 75 | |
| Pro | His | Leu | Ile | Phe | Ile | Leu | Ala | Asp | Asp | Gln | Gly | Phe | Arg | Asp | 80 | 85 | 90 | |
| Val | Gly | Tyr | His | Gly | Ser | Glu | Ile | Lys | Thr | Pro | Thr | Leu | Asp | Lys | 95 | 100 | 105 | |
| Leu | Ala | Ala | Glu | Gly | Val | Lys | Leu | Glu | Asn | Tyr | Tyr | Val | Gln | Pro | 110 | 115 | 120 | |
| Ile | Cys | Thr | Pro | Ser | Arg | Ser | Gln | Phe | Ile | Thr | Gly | Lys | Tyr | Gln | 125 | 130 | 135 | |
| Ile | His | Thr | Gly | Leu | Gln | His | Ser | Ile | Ile | Arg | Pro | Thr | Gln | Pro | 140 | 145 | 150 | |

| | | |
|-----------------|---------------------|-------------------------|
| Asn Cys Leu Pro | Leu Asp Asn Ala Thr | Leu Pro Gln Lys Leu Lys |
| 155 | 160 | 165 |
| Glu Val Gly Tyr | Ser Thr His Met Val | Gly Lys Trp His Leu Gly |
| 170 | 175 | 180 |
| Phe Asn Arg Lys | Glu Cys Met Pro Thr | Arg Arg Gly Phe Asp Thr |
| 185 | 190 | 195 |
| Phe Phe Gly Ser | Leu Leu Gly Ser Gly | Asp Tyr Tyr Thr His Tyr |
| 200 | 205 | 210 |
| Lys Cys Asp Ser | Pro Gly Met Cys Gly | Tyr Asp Leu Tyr Glu Asn |
| 215 | 220 | 225 |
| Asp Asn Ala Ala | Trp Asp Tyr Asp Asn | Gly Ile Tyr Ser Thr Gln |
| 230 | 235 | 240 |
| Met Tyr Thr Gln | Arg Val Gln Gln Ile | Leu Ala Ser His Asn Pro |
| 245 | 250 | 255 |
| Thr Lys Pro Ile | Phe Leu Tyr Thr Ala | Tyr Gln Ala Val His Ser |
| 260 | 265 | 270 |
| Pro Leu Gln Ala | Pro Gly Arg Tyr Phe | Glu His Tyr Arg Ser Ile |
| 275 | 280 | 285 |
| Ile Asn Ile Asn | Arg Arg Arg Tyr Ala | Ala Met Leu Ser Cys Leu |
| 290 | 295 | 300 |
| Asp Glu Ala Ile | Asn Asn Val Thr Leu | Ala Leu Lys Thr Tyr Gly |
| 305 | 310 | 315 |
| Phe Tyr Asn Asn | Ser Ile Ile Ile Tyr | Ser Ser Asp Asn Gly Gly |
| 320 | 325 | 330 |
| Gln Pro Thr Ala | Gly Gly Ser Asn Trp | Pro Leu Arg Gly Ser Lys |
| 335 | 340 | 345 |
| Gly Thr Tyr Trp | Glu Gly Gly Ile Arg | Ala Val Gly Phe Val His |
| 350 | 355 | 360 |
| Ser Pro Leu Leu | Lys Asn Lys Gly Thr | Val Cys Lys Glu Leu Val |
| 365 | 370 | 375 |
| His Ile Thr Asp | Trp Tyr Pro Thr Leu | Ile Ser Leu Ala Glu Gly |
| 380 | 385 | 390 |
| Gln Ile Asp Glu | Asp Ile Gln Leu Asp | Gly Tyr Asp Ile Trp Glu |
| 395 | 400 | 405 |
| Thr Ile Ser Glu | Gly Leu Arg Ser Pro | Arg Val Asp Ile Leu His |
| 410 | 415 | 420 |
| Asn Ile Asp Pro | Tyr Thr Pro Arg Gln | Lys Met Ala Pro Gly Gln |
| 425 | 430 | 435 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Ala | Met | Gly | Ser | Gly | Thr | Leu | Gln | Ser | Ser | Gln | Pro | Ser | Glu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Cys | Ser | Thr | Gly | Asn | Cys | Leu | Gln | Glu | Ile | Leu | Ala | Thr | Ala | Thr | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Gly | Ser | Pro | Leu | Ser | Leu | Ser | Ala | Thr | Trp | Asp | Arg | Thr | Gly | Gly | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Thr | Met | Asn | Gly | Ser | Pro | Cys | Gln | Leu | Ala | Lys | Val | Tyr | Gly | Phe | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ser | Thr | Ser | Gln | Pro | Thr | His | Met | Arg | Gly | Trp | Thr | Tyr | Leu | Thr | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Gly | Ile | Gln | Glu | Ser | | | | | | | | | | | |
| | | | | 515 | | | | | | | | | | | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 116
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 116
 ctctctgagt gtacatctgt gtgg 24

<210> 117
 <211> 53
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<220>
 <221> unsure
 <222> 33
 <223> unknown base

<400> 117
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cgg 53

<210> 118

<211> 2260

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2009, 2026, 2033, 2055, 2074, 2078, 2086

<223> unknown base

<400> 118

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gccttgcgct cccgctgctg ctctcctggg tggcaggtgg ttccgggaac 200
gcggccagtg caaggcatca cgggttggtta gcatcggcac gtcagcctgg 250
ggtctgtcac tatggaacta aactggcctg ctgctacggc tggagaagaa 300
acagcaaggg agtctgtgaa gctacatgcg aacctggatg taagtttggt 350
gagtgcgtgg gaccaaaca atgcagatgc tttccaggat acaccgggaa 400
aacctgcagt caagatgtga atgagtgtgg aatgaaaccc cggccatgcc 450
aacacagatg tgtgaataca cacggaagct acaagtgctt ttgcctcagt 500
ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550
catgataaac tgtcagtaca gctgtgaaga cacagaagaa gggccacagt 600
gcctgtgtcc atcctcagga ctccgcctgg ccccaaattg aagagactgt 650
ctagatattg atgaatgtgc ctctggtaaa gtcattctgtc cctacaatcg 700
aagatgtgtg aacacatttg gaagctacta ctgcaaattg cacattgggt 750
tcgaactgca atatatcagt ggacgatatg actgtataga tataaatgaa 800
tgtactatgg atagccatac gtgcagccac catgccaatt gcttcaatac 850
ccaaggggcc ttcaagtgtg aatgcaagca gggatataaa ggcaatggac 900
ttcgggtgtt tgctatccct gaaaattctg tgaaggaagt cctcagagca 950
cctggtacca tcaaagacag aatcaagaag ttgcttgctc acaaaaacag 1000
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 ctcttatgat acttcttga aactatgaca tcaaagatag acttttgcct 2200
 aagtggctta gctgggtctt tcatagccaa acttgtatat ttaattcttt 2250
 gtaataataa 2260

<210> 119

<211> 338

<212> PRT

<213> Homo sapiens

<400> 119

Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu Leu Leu Ser Trp

1

5

10

15

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Ala | Gly | Gly | Phe | Gly | Asn | Ala | Ala | Ser | Ala | Arg | His | His | Gly | | 20 | 25 | 30 |
| Leu | Leu | Ala | Ser | Ala | Arg | Gln | Pro | Gly | Val | Cys | His | Tyr | Gly | Thr | | 35 | 40 | 45 |
| Lys | Leu | Ala | Cys | Cys | Tyr | Gly | Trp | Arg | Arg | Asn | Ser | Lys | Gly | Val | | 50 | 55 | 60 |
| Cys | Glu | Ala | Thr | Cys | Glu | Pro | Gly | Cys | Lys | Phe | Gly | Glu | Cys | Val | | 65 | 70 | 75 |
| Gly | Pro | Asn | Lys | Cys | Arg | Cys | Phe | Pro | Gly | Tyr | Thr | Gly | Lys | Thr | | 80 | 85 | 90 |
| Cys | Ser | Gln | Asp | Val | Asn | Glu | Cys | Gly | Met | Lys | Pro | Arg | Pro | Cys | | 95 | 100 | 105 |
| Gln | His | Arg | Cys | Val | Asn | Thr | His | Gly | Ser | Tyr | Lys | Cys | Phe | Cys | | 110 | 115 | 120 |
| Leu | Ser | Gly | His | Met | Leu | Met | Pro | Asp | Ala | Thr | Cys | Val | Asn | Ser | | 125 | 130 | 135 |
| Arg | Thr | Cys | Ala | Met | Ile | Asn | Cys | Gln | Tyr | Ser | Cys | Glu | Asp | Thr | | 140 | 145 | 150 |
| Glu | Glu | Gly | Pro | Gln | Cys | Leu | Cys | Pro | Ser | Ser | Gly | Leu | Arg | Leu | | 155 | 160 | 165 |
| Ala | Pro | Asn | Gly | Arg | Asp | Cys | Leu | Asp | Ile | Asp | Glu | Cys | Ala | Ser | | 170 | 175 | 180 |
| Gly | Lys | Val | Ile | Cys | Pro | Tyr | Asn | Arg | Arg | Cys | Val | Asn | Thr | Phe | | 185 | 190 | 195 |
| Gly | Ser | Tyr | Tyr | Cys | Lys | Cys | His | Ile | Gly | Phe | Glu | Leu | Gln | Tyr | | 200 | 205 | 210 |
| Ile | Ser | Gly | Arg | Tyr | Asp | Cys | Ile | Asp | Ile | Asn | Glu | Cys | Thr | Met | | 215 | 220 | 225 |
| Asp | Ser | His | Thr | Cys | Ser | His | His | Ala | Asn | Cys | Phe | Asn | Thr | Gln | | 230 | 235 | 240 |
| Gly | Ser | Phe | Lys | Cys | Lys | Cys | Lys | Gln | Gly | Tyr | Lys | Gly | Asn | Gly | | 245 | 250 | 255 |
| Leu | Arg | Cys | Ser | Ala | Ile | Pro | Glu | Asn | Ser | Val | Lys | Glu | Val | Leu | | 260 | 265 | 270 |
| Arg | Ala | Pro | Gly | Thr | Ile | Lys | Asp | Arg | Ile | Lys | Lys | Leu | Leu | Ala | | 275 | 280 | 285 |
| His | Lys | Asn | Ser | Met | Lys | Lys | Lys | Ala | Lys | Ile | Lys | Asn | Val | Thr | | 290 | 295 | 300 |

Pro Glu Pro Thr Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro
305 310 315

Phe Asn Tyr Glu Glu Ile Val Ser Arg Gly Gly Asn Ser His Gly
320 325 330

Gly Lys Lys Gly Asn Glu Glu Lys
335

<210> 120

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 120

cctcagtggc cacatgctca tg 22

<210> 121

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 121

ggctgcacgt atggctatcc atag 24

<210> 122

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 122

gataaactgt cagtacagct gtgaagacac agaagaaggg ccacagtgcc 50

<210> 123

<211> 1199

<212> DNA

<213> Homo sapiens

<400> 123

gggagctgct gctgtggctg ctgggtgctgt gcgcgctgct cctgctcttg 50

gtgcagctgc tgcgcttcct gagggctgac ggcgacctga cgctactatg 100

ggccgagtgg cagggacgac gcccagaatg ggagctgact gatatgggtg 150

tgtgggtgac tggagcctcg agtgggaattg gtgaggagct ggcttaccag 200

ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcata 250

gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300
aagatatact tgttttgccc cttgacctga ccgacactgg ttcccatgaa 350
gcggtacca aagctgttct ccaggagttt ggtagaatcg acattctggt 400
caacaatggt ggaatgtccc agcgttctct gtgcatggat accagcttgg 450
atgtctacag aaagctaata gagcttaact acttagggac ggtgtccttg 500
acaaaatgtg ttctgcctca catgatcgag aggaagcaag gaaagattgt 550
tactgtgaat agcatcctgg gtatcatatc tgtacctctt tccattggat 600
actgtgctag caagcatgct ctccgggggt tttttaatgg ccttcgaaca 650
gaacttgcca cataccagg tataatagtt tctaacattt gcccaggacc 700
tgtgcaatca aatattgtgg agaattccct agctggagaa gtcacaaaga 750
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gtgcggctga tgtaatcag catggccaat gatttgaaag aagtttggt 850
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actaatttgt gattttactt tttaatagat atgactttgc ttccaacatg 1150
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<210> 124

<211> 289

<212> PRT

<213> Homo sapiens

<400> 124

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Trp | Val | Thr | Gly | Ala | Ser | Ser | Gly | Ile | Gly | Glu | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Tyr | Gln | Leu | Ser | Lys | Leu | Gly | Val | Ser | Leu | Val | Leu | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Arg | Val | His | Glu | Leu | Glu | Arg | Val | Lys | Arg | Arg | Cys | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Gly | Asn | Leu | Lys | Glu | Lys | Asp | Ile | Leu | Val | Leu | Pro | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Leu | Thr | Asp | Thr | Gly | Ser | His | Glu | Ala | Ala | Thr | Lys | Ala | Val | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Leu | Gln | Glu | Phe | Gly | Arg | Ile | Asp | Ile | Leu | Val | Asn | Asn | Gly | Gly | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |

Thr Lys His Asp

<210> 125

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

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<210> 126

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 126

ctgtgaatag catcctggg 19

<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 127

cttttcaagc cactggaggg 20

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 128

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<210> 129

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 129

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<210> 130

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 130

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<210> 131
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<212> DNA
<213> Homo sapiens

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tgtaggttg cctgcggaca cgctgggcct ctgtcctgat gctgctgagc 200
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aggccagtgt gaggaggcaa ggagcccaca tctgcagcg ctccctggtg 550
gcagacacct gggctctcac tgctgccac tgctttgaaa aggagcagc 600
aacagaactg aattcctggt cagtggctct gggttctctg cagcgtgagg 650
gactcagccc tggggccgaa gaggtggggg tggctgcct gcagttgcc 700
agggcctata accactacag ccagggtca gacctggccc tgctgcagct 750
cgccccccc acgaccaca caccctctg cctgccccag ccgccccatc 800
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agtgatgctc ctgggacctc acgcaatctg cgctgcgtc tcatcagtcg 900
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<210> 132

<211> 571

<212> PRT

<213> Homo sapiens

<400> 132

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Ser | Ser | Leu | Val | Ser | Leu | Ala | Gly | Ser | Val | Tyr | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Trp | Ile | Leu | Phe | Phe | Val | Leu | Tyr | Asp | Phe | Cys | Ile | Val | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | |
|---|-----|-----|-----|
| Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe | 35 | 40 | 45 |
| Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn | 50 | 55 | 60 |
| Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln | 65 | 70 | 75 |
| Gly Ala His Ile Cys Ser Gly Ser Leu Val Ala Asp Thr Trp Val | 80 | 85 | 90 |
| Leu Thr Ala Ala His Cys Phe Glu Lys Ala Ala Ala Thr Glu Leu | 95 | 100 | 105 |
| Asn Ser Trp Ser Val Val Leu Gly Ser Leu Gln Arg Glu Gly Leu | 110 | 115 | 120 |
| Ser Pro Gly Ala Glu Glu Val Gly Val Ala Ala Leu Gln Leu Pro | 125 | 130 | 135 |
| Arg Ala Tyr Asn His Tyr Ser Gln Gly Ser Asp Leu Ala Leu Leu | 140 | 145 | 150 |
| Gln Leu Ala His Pro Thr Thr His Thr Pro Leu Cys Leu Pro Gln | 155 | 160 | 165 |
| Pro Ala His Arg Phe Pro Phe Gly Ala Ser Cys Trp Ala Thr Gly | 170 | 175 | 180 |
| Trp Asp Gln Asp Thr Ser Asp Ala Pro Gly Thr Leu Arg Asn Leu | 185 | 190 | 195 |
| Arg Leu Arg Leu Ile Ser Arg Pro Thr Cys Asn Cys Ile Tyr Asn | 200 | 205 | 210 |
| Gln Leu His Gln Arg His Leu Ser Asn Pro Ala Arg Pro Gly Met | 215 | 220 | 225 |
| Leu Cys Gly Gly Pro Gln Pro Gly Val Gln Gly Pro Cys Gln Gly | 230 | 235 | 240 |
| Asp Ser Gly Gly Pro Val Leu Cys Leu Glu Pro Asp Gly His Trp | 245 | 250 | 255 |
| Val Gln Ala Gly Ile Ile Ser Phe Ala Ser Ser Cys Ala Gln Glu | 260 | 265 | 270 |
| Asp Ala Pro Val Leu Leu Thr Asn Thr Ala Ala His Ser Ser Trp | 275 | 280 | 285 |
| Leu Gln Ala Arg Val Gln Gly Ala Ala Phe Leu Ala Gln Ser Pro | 290 | 295 | 300 |
| Glu Thr Pro Glu Met Ser Asp Glu Asp Ser Cys Val Ala Cys Gly | 305 | 310 | 315 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Arg | Thr | Ala | Gly | Pro | Gln | Ala | Gly | Ala | Pro | Ser | Pro | Trp | 320 | 325 | 330 |
| Pro | Trp | Glu | Ala | Arg | Leu | Met | His | Gln | Gly | Gln | Leu | Ala | Cys | Gly | 335 | 340 | 345 |
| Gly | Ala | Leu | Val | Ser | Glu | Glu | Ala | Val | Leu | Thr | Ala | Ala | His | Cys | 350 | 355 | 360 |
| Phe | Ile | Gly | Arg | Gln | Ala | Pro | Glu | Glu | Trp | Ser | Val | Gly | Leu | Gly | 365 | 370 | 375 |
| Thr | Arg | Pro | Glu | Glu | Trp | Gly | Leu | Lys | Gln | Leu | Ile | Leu | His | Gly | 380 | 385 | 390 |
| Ala | Tyr | Thr | His | Pro | Glu | Gly | Gly | Tyr | Asp | Met | Ala | Leu | Leu | Leu | 395 | 400 | 405 |
| Leu | Ala | Gln | Pro | Val | Thr | Leu | Gly | Ala | Ser | Leu | Arg | Pro | Leu | Cys | 410 | 415 | 420 |
| Leu | Pro | Tyr | Pro | Asp | His | His | Leu | Pro | Asp | Gly | Glu | Arg | Gly | Trp | 425 | 430 | 435 |
| Val | Leu | Gly | Arg | Ala | Arg | Pro | Gly | Ala | Gly | Ile | Ser | Ser | Leu | Gln | 440 | 445 | 450 |
| Thr | Val | Pro | Val | Thr | Leu | Leu | Gly | Pro | Arg | Ala | Cys | Ser | Arg | Leu | 455 | 460 | 465 |
| His | Ala | Ala | Pro | Gly | Gly | Asp | Gly | Ser | Pro | Ile | Leu | Pro | Gly | Met | 470 | 475 | 480 |
| Val | Cys | Thr | Ser | Ala | Val | Gly | Glu | Leu | Pro | Ser | Cys | Glu | Gly | Leu | 485 | 490 | 495 |
| Ser | Gly | Ala | Pro | Leu | Val | His | Glu | Val | Arg | Gly | Thr | Trp | Phe | Leu | 500 | 505 | 510 |
| Ala | Gly | Leu | His | Ser | Phe | Gly | Asp | Ala | Cys | Gln | Gly | Pro | Ala | Arg | 515 | 520 | 525 |
| Pro | Ala | Val | Phe | Thr | Ala | Leu | Pro | Ala | Tyr | Glu | Asp | Trp | Val | Ser | 530 | 535 | 540 |
| Ser | Leu | Asp | Trp | Gln | Val | Tyr | Phe | Ala | Glu | Glu | Pro | Glu | Pro | Glu | 545 | 550 | 555 |
| Ala | Glu | Pro | Gly | Ser | Cys | Leu | Ala | Asn | Ile | Ser | Gln | Pro | Thr | Ser | 560 | 565 | 570 |

Cys

<210> 133
 <211> 24
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 133

cctgtgctgt gcctcgagcc tgac 24

<210> 134

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

gtgggcagca gttagaccg cctc 24

<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45

<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

cgggcccgc cgggccccca ttcgggccgg gcctcgctgc ggcggcgact 50

gagccaggct gggccgcgtc cctgagtc cc agagtcggcg cggcgcgga 100

ggggcagcct tccaccacgg ggagcccagc tgtcagccgc ctcacaggaa 150

gatgctgcgt cggcggggca gccctggcat ggggtgtcat gtgggtgcag 200

ccctgggagc actgtggttc tgcctcacag gagccctgga ggtccaggtc 250

cctgaagacc cagtgggtggc actggtgggc accgatgcca ccctgtgctg 300

ctccttctcc cctgagcctg gcttcagcct ggcacagctc aacctcatct 350

ggcagctgac agataccaaa cagctggtgc acagctttgc tgagggccag 400

gaccagggca gcgcctatgc caaccgcacg gccctcttcc cggacctgct 450

ggcacagggc aacgcattccc tgaggctgca gcgcgtgcgt gtggcggacg 500

agggcagctt cacctgcttc gtgagcatcc gggatttcgg cagcgctgcc 550

gtcagcctgc aggtggccgc tccctactcg aagcccagca tgaccctgga 600
gccaacaag gacctgcggc caggggacac ggtgaccatc acgtgctcca 650
gctaccaggg ctaccctgag gctgaggtgt tctggcagga tgggcagggt 700
gtgcccctga ctggcaacgt gaccacgtcg cagatggcca acgagcaggg 750
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<210> 137
<211> 316
<212> PRT
<213> Homo sapiens
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<220>  
<221> unsure  
<222> 233  
<223> unknown amino acid
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|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 137 | | | | | | | | | | | | | | |
| Met | Leu | Arg | Arg | Arg | Gly | Ser | Pro | Gly | Met | Gly | Val | His | Val | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Ala | Leu | Gly | Ala | Leu | Trp | Phe | Cys | Leu | Thr | Gly | Ala | Leu | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Gln | Val | Pro | Glu | Asp | Pro | Val | Val | Ala | Leu | Val | Gly | Thr | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Thr | Leu | Cys | Cys | Ser | Phe | Ser | Pro | Glu | Pro | Gly | Phe | Ser | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Gln | Leu | Asn | Leu | Ile | Trp | Gln | Leu | Thr | Asp | Thr | Lys | Gln | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | His | Ser | Phe | Ala | Glu | Gly | Gln | Asp | Gln | Gly | Ser | Ala | Tyr | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Arg | Thr | Ala | Leu | Phe | Pro | Asp | Leu | Leu | Ala | Gln | Gly | Asn | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Leu | Arg | Leu | Gln | Arg | Val | Arg | Val | Ala | Asp | Glu | Gly | Ser | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Cys | Phe | Val | Ser | Ile | Arg | Asp | Phe | Gly | Ser | Ala | Ala | Val | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Gln | Val | Ala | Ala | Pro | Tyr | Ser | Lys | Pro | Ser | Met | Thr | Leu | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Asn | Lys | Asp | Leu | Arg | Pro | Gly | Asp | Thr | Val | Thr | Ile | Thr | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Ser | Tyr | Gln | Gly | Tyr | Pro | Glu | Ala | Glu | Val | Phe | Trp | Gln | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Gln | Gly | Val | Pro | Leu | Thr | Gly | Asn | Val | Thr | Thr | Ser | Gln | Met |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Asn | Glu | Gln | Gly | Leu | Phe | Asp | Val | His | Ser | Val | Leu | Arg | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Leu | Gly | Ala | Asn | Gly | Thr | Tyr | Ser | Cys | Leu | Val | Arg | Asn | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Gln | Gln | Asp | Ala | His | Xaa | Ser | Val | Thr | Ile | Thr | Gly | Gln | 230 | 235 | 240 |
| Pro | Met | Thr | Phe | Pro | Pro | Glu | Ala | Leu | Trp | Val | Thr | Val | Gly | Leu | 245 | 250 | 255 |
| Ser | Val | Cys | Leu | Ile | Ala | Leu | Leu | Val | Ala | Leu | Ala | Phe | Val | Cys | 260 | 265 | 270 |
| Trp | Arg | Lys | Ile | Lys | Gln | Ser | Cys | Glu | Glu | Glu | Asn | Ala | Gly | Ala | 275 | 280 | 285 |
| Glu | Asp | Gln | Asp | Gly | Glu | Gly | Glu | Gly | Ser | Lys | Thr | Ala | Leu | Gln | 290 | 295 | 300 |
| Pro | Leu | Lys | His | Ser | Asp | Ser | Lys | Glu | Asp | Asp | Gly | Gln | Glu | Ile | 305 | 310 | 315 |

Ala

<210> 138

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 138

ctggcacagc tcaacctcat ctgg 24

<210> 139

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 139

gctgtctgtc tgtctcattg 20

<210> 140

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 140

ggacacagta tactgaccac 20

<210> 141

<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 141
tgcgaaccag gcagctgtaa gtgc 24

<210> 142
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 142
tggaagaaga ggggtggtgat gtgg 24

<210> 143
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 143
cagctgacag acaccaaaca gctggtgcac agtttcaccg aaggc 45

<210> 144
<211> 2336
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1620, 1673
<223> unknown base

<400> 144
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gaaggggggag tcctgaactt gtctgaagcc cttgtccgta agccttgaac 100
tacgttctta aatctatgaa gtcgagggac ctttcgctgc tttttagagg 150
acttctttcc ttgcttcagc aacatgaggc ttttcttgtg gaacgcggtc 200
ttgactctgt tcgtcacttc tttgattggg gctttgatcc ctgaaccaga 250
agtgaaaatt gaagttctcc agaagccatt catctgccat cgcaagacca 300
aaggagggga tttgatgttg gtccactatg aaggctactt agaaaaggac 350
ggctccttat ttcactccac tcacaaacat aacaatggtc agcccatttg 400

gtttaccctg ggcacacctg aggctctcaa aggttgggac cagggcttga 450
aaggaatgtg tgtaggagag aagagaaagc tcattattcc tcctgctctg 500
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cattccaaga aatggatctt aatgatgact ggaaactctc taaagatgag 650
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aagacaaaga tgggtttata tctgccagag aatttacata taaacacgat 800
gagttataga gatacatcta cccttttaac atagcactca tctttcaaga 850
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cccttaggtt tctaagtacc catttctttc tgataagtta ttgggaagaa 1000
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<210> 145

<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Phe | Leu | Trp | Asn | Ala | Val | Leu | Thr | Leu | Phe | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Leu | Ile | Gly | Ala | Leu | Ile | Pro | Glu | Pro | Glu | Val | Lys | Ile | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Val | Leu | Gln | Lys | Pro | Phe | Ile | Cys | His | Arg | Lys | Thr | Lys | Gly | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asp | Leu | Met | Leu | Val | His | Tyr | Glu | Gly | Tyr | Leu | Glu | Lys | Asp | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Ser | Leu | Phe | His | Ser | Thr | His | Lys | His | Asn | Asn | Gly | Gln | Pro | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Trp | Phe | Thr | Leu | Gly | Ile | Leu | Glu | Ala | Leu | Lys | Gly | Trp | Asp | Gln |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Gly | Leu | Lys | Gly | Met | Cys | Val | Gly | Glu | Lys | Arg | Lys | Leu | Ile | Ile |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Pro | Pro | Ala | Leu | Gly | Tyr | Gly | Lys | Glu | Gly | Lys | Gly | Lys | Ile | Pro |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Pro | Glu | Ser | Thr | Leu | Ile | Phe | Asn | Ile | Asp | Leu | Leu | Glu | Ile | Arg |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Asn | Gly | Pro | Arg | Ser | His | Glu | Ser | Phe | Gln | Glu | Met | Asp | Leu | Asn |
| | | | 140 | | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asp | Trp | Lys | Leu | Ser | Lys | Asp | Glu | Val | Lys | Ala | Tyr | Leu | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| | | | | | | | | | | | | | | |
| Lys | Glu | Phe | Glu | Lys | His | Gly | Ala | Val | Val | Asn | Glu | Ser | His | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| | | | | | | | | | | | | | | |
| Asp | Ala | Leu | Val | Glu | Asp | Ile | Phe | Asp | Lys | Glu | Asp | Glu | Asp | Lys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| | | | | | | | | | | | | | | |
| Asp | Gly | Phe | Ile | Ser | Ala | Arg | Glu | Phe | Thr | Tyr | Lys | His | Asp | Glu |
| | | | | 200 | | | | | 205 | | | | | 210 |

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 146

ctttccttgc ttcagcaaca tgaggc 26

<210> 147

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 147

gccagagca ggaggaatga tgagc 25

<210> 148

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 148

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<210> 149

<211> 2196

<212> DNA

<213> Homo sapiens

<400> 149

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aagatcatta acctgaagct ggagcgggtt caagaccgcg tggagttctc 450
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<211> 215

<212> PRT

<213> Homo sapiens

<400> 150

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Arg | Asp | Ala | Trp | Leu | Pro | Arg | Pro | Ala | Phe | Ser | Leu | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Leu | Ser | Leu | Phe | Phe | Ser | Leu | Val | Pro | Pro | Gly | Arg | Ser | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Val | Thr | Val | Pro | Ala | Thr | Leu | Asn | Val | Leu | Asn | Gly | Ser | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Arg | Leu | Pro | Cys | Thr | Phe | Asn | Ser | Cys | Tyr | Thr | Val | Asn | His |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Gln | Phe | Ser | Leu | Asn | Trp | Thr | Tyr | Gln | Glu | Cys | Asn | Asn | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Glu | Glu | Met | Phe | Leu | Gln | Phe | Arg | Met | Lys | Ile | Ile | Asn | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Leu | Glu | Arg | Phe | Gln | Asp | Arg | Val | Glu | Phe | Ser | Gly | Asn | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Lys | Tyr | Asp | Val | Ser | Val | Met | Leu | Arg | Asn | Val | Gln | Pro | Glu |

| | 110 | 115 | 120 |
|---|-----|-----|-----|
| Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg | 125 | 130 | 135 |
| His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu | 140 | 145 | 150 |
| Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser | 155 | 160 | 165 |
| Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val | 170 | 175 | 180 |
| Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp | 185 | 190 | 195 |
| Leu Lys Thr Glu Glu Glu Gly Lys Thr Asp Gly Glu Gly Asn Pro | 200 | 205 | 210 |
| Asp Asp Gly Ala Lys | 215 | | |

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 <211> 524
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> 103, 233
 <223> unknown base

<400> 151
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 ccnactaaca tctcagtctc tgaaaatgca cagagatgcc tggctacctc 150
 gccctgcctt cagcctcacg gggctcagtc tctttttctc tttggtgcc 200
 ccaggacgga gcatggaggt ccacagtacc tgnccaccct caacgtcctc 250
 aatggctctg acgcccgcct gccctgcct tcaactcctg ctacacagtg 300
 aaccacaaac agttctccct gaactggact taccaggagt gcaacaactg 350
 ctctgaggag atgttcctcc agttccgcat gaagatcatt aacctgaagc 400
 tggagcgggt tcaagaccgc gtggagttct cagggaaccc cagcaagtac 450
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 caactgctac atcatgaacc cccc 524

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<211> 368
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 56, 123
<223> unknown base

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<211> 24
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 153
acggagcatg gaggtccaca gtac 24

<210> 154
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<220>
<223> Synthetic oligonucleotide probe

<400> 154
gcacgtttct cagcatcacc gac 23

<210> 155
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 155

cgcttgcct gcaccttcaa ctctgctac acagtgaacc aaaaacagtt 50

<210> 156

<211> 2680

<212> DNA

<213> Homo sapiens

<400> 156

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cgcggaacca gcgtcccg ccggacgtca cccccagtg gtgctggctcc 150

ctgggtgattt gggtaaccaa ctggaagcca agctggacaa gccgacagtg 200

gtgcactacc tctgtccaa gaagaccgaa agctacttca caatctggct 250

gaacctggaa ctgctgctgc ctgtcatcat tgactgctgg attgacaata 300

tcaggctgggt ttacaacaaa acatccaggg ccaccagtt tcctgatgggt 350

gtggatgtac gtgtccctgg ctttggaag accttctcac tggagttcct 400

ggacccagc aaaagcagcg tgggttccta ttccacacc atggtggaga 450

gccttggtgg ctggggctac acacggggtg aggatgtccg aggggctccc 500

tatgactggc gccgagcccc aaatgaaaac gggccctact tcctggccct 550

ccgcgagatg atcgaggaga tgtaccagct gtatgggggc cccgtggctgc 600

tggttgccca cagtatgggc aacatgtaca cgctctactt tctgcagcgg 650

cagccgcagg cctggaagga caagtatatc cgggccttcg tgtcactggg 700

tgcgccctgg gggggcgtgg ccaagacct gcgcgtcctg gcttcaggag 750

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cggtcagctg tctccaccag ctggctgctg cctacaact acacatggct 850

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actaccgcaa gttcttcag gacatcggct ttgaagatgg ctggctcatg 950

cggcaggaca cagaagggt ggtggaagcc acgatgccac ctggcgtgca 1000

gctgcactgc ctctatggta ctggcgtccc cacaccagac tccttctact 1050

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atgctgtaaa aaaaaaaaaa aaaaaaaaaa 2680

<210> 157

<211> 412

<212> PRT

<213> Homo Sapien

<400> 157

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Gly | Leu | His | Leu | Arg | Pro | Tyr | Arg | Val | Gly | Leu | Leu | Pro | Asp | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Leu | Leu | Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Leu | Ala | Asp | Pro | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ala | Leu | Pro | Ala | Gly | Arg | His | Pro | Pro | Val | Val | Leu | Val | Pro | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Asp | Leu | Gly | Asn | Gln | Leu | Glu | Ala | Lys | Leu | Asp | Lys | Pro | Thr | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | His | Tyr | Leu | Cys | Ser | Lys | Lys | Thr | Glu | Ser | Tyr | Phe | Thr | Ile | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Trp | Leu | Asn | Leu | Glu | Leu | Leu | Leu | Pro | Val | Ile | Ile | Asp | Cys | Trp | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ile | Asp | Asn | Ile | Arg | Leu | Val | Tyr | Asn | Lys | Thr | Ser | Arg | Ala | Thr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | Phe | Pro | Asp | Gly | Val | Asp | Val | Arg | Val | Pro | Gly | Phe | Gly | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Phe | Ser | Leu | Glu | Phe | Leu | Asp | Pro | Ser | Lys | Ser | Ser | Val | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Tyr | Phe | His | Thr | Met | Val | Glu | Ser | Leu | Val | Gly | Trp | Gly | Tyr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Thr | Arg | Gly | Glu | Asp | Val | Arg | Gly | Ala | Pro | Tyr | Asp | Trp | Arg | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Pro | Asn | Glu | Asn | Gly | Pro | Tyr | Phe | Leu | Ala | Leu | Arg | Glu | Met | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ile | Glu | Glu | Met | Tyr | Gln | Leu | Tyr | Gly | Gly | Pro | Val | Val | Leu | Val | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | His | Ser | Met | Gly | Asn | Met | Tyr | Thr | Leu | Tyr | Phe | Leu | Gln | Arg | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Pro | Gln | Ala | Trp | Lys | Asp | Lys | Tyr | Ile | Arg | Ala | Phe | Val | Ser | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Gly | Ala | Pro | Trp | Gly | Gly | Val | Ala | Lys | Thr | Leu | Arg | Val | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Ser | Gly | Asp | Asn | Asn | Arg | Ile | Pro | Val | Ile | Gly | Pro | Leu | Lys | |

| | | | |
|---|-----|-----|-----|
| | 245 | 250 | 255 |
| Ile Arg Glu Gln Gln Arg Ser Ala Val Ser Thr Ser Trp Leu Leu | | | |
| | 260 | 265 | 270 |
| Pro Tyr Asn Tyr Thr Trp Ser Pro Glu Lys Val Phe Val Gln Thr | | | |
| | 275 | 280 | 285 |
| Pro Thr Ile Asn Tyr Thr Leu Arg Asp Tyr Arg Lys Phe Phe Gln | | | |
| | 290 | 295 | 300 |
| Asp Ile Gly Phe Glu Asp Gly Trp Leu Met Arg Gln Asp Thr Glu | | | |
| | 305 | 310 | 315 |
| Gly Leu Val Glu Ala Thr Met Pro Pro Gly Val Gln Leu His Cys | | | |
| | 320 | 325 | 330 |
| Leu Tyr Gly Thr Gly Val Pro Thr Pro Asp Ser Phe Tyr Tyr Glu | | | |
| | 335 | 340 | 345 |
| Ser Phe Pro Asp Arg Asp Pro Lys Ile Cys Phe Gly Asp Gly Asp | | | |
| | 350 | 355 | 360 |
| Gly Thr Val Asn Leu Lys Ser Ala Leu Gln Cys Gln Ala Trp Gln | | | |
| | 365 | 370 | 375 |
| Ser Arg Gln Glu His Gln Val Leu Leu Gln Glu Leu Pro Gly Ser | | | |
| | 380 | 385 | 390 |
| Glu His Ile Glu Met Leu Ala Asn Ala Thr Thr Leu Ala Tyr Leu | | | |
| | 395 | 400 | 405 |
| Lys Arg Val Leu Leu Gly Pro | | | |
| | 410 | | |

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<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 158

ctggggctac acacggggtg agg 23

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 159

ggtgccgctg cagaaagtag agcg 24

<210> 160
<211> 45
<212> DNA
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<223> Synthetic oligonucleotide probe

<400> 160
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<210> 161
<211> 1512
<212> DNA
<213> Homo sapiens

<400> 161
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<210> 162

<211> 224

<212> PRT

<213> Homo sapiens

<400> 162

| | | | | | | | | | | | | | | | | | | |
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| Met | Glu | Ser | Gly | Ala | Tyr | Gly | Ala | Ala | Lys | Ala | Gly | Gly | Ser | Phe | 1 | 5 | 10 | 15 |
| Asp | Leu | Arg | Arg | Phe | Leu | Thr | Gln | Pro | Gln | Val | Val | Ala | Arg | Ala | 20 | 25 | 30 | |
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly | 35 | 40 | 45 | |
| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val | 50 | 55 | 60 | |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly | 65 | 70 | 75 | |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala | 80 | 85 | 90 | |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val | 95 | 100 | 105 | |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe | 110 | 115 | 120 | |
| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro | 125 | 130 | 135 | |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr | 140 | 145 | 150 | |

Phe Ser Phe Phe Ser Ile Phe Ser Trp Gly Val Leu Ala Ser Leu
155 160 165

Ala Tyr Gln Arg Tyr Lys Ala Gly Val Asp Asp Phe Ile Gln Asn
170 175 180

Tyr Val Asp Pro Thr Pro Asp Pro Asn Thr Ala Tyr Ala Ser Tyr
185 190 195

Pro Gly Ala Ser Val Asp Asn Tyr Gln Gln Pro Pro Phe Thr Gln
200 205 210

Asn Ala Glu Thr Thr Glu Gly Tyr Gln Pro Pro Pro Val Tyr
215 220

<210> 163

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 163

tggtcttcgc cttgatcgtg ttct 24

<210> 164

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 164

gtgtactgag cggcggtag 20

<210> 165

<211> 23

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 165

ctgaaggtga tggctgccct cac 23

<210> 166

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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ccaggaggct catgggaaag tcc 23

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 <213> Homo sapiens

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 35 40 45
 Pro Leu Phe Val Leu Leu Ala Leu Leu Val Leu Ala Ser Ala Gly
 50 55 60
 Val Leu Leu Trp Tyr Phe Leu Gly Tyr Lys Ala Glu Val Met Val
 65 70 75
 Ser Gln Val Tyr Ser Gly Ser Leu Arg Val Leu Asn Arg His Phe
 80 85 90
 Ser Gln Asp Leu Thr Arg Arg Glu Ser Ser Ala Phe Arg Ser Glu

| 95 | | | | | | | | | | 100 | | | | | 105 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | | | | | |
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| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | | | | | |
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| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | | | | | |
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| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Val | Val | Trp | Lys | Lys | Gly | Leu | His | Ser | Tyr | Tyr | Asp | Pro | Phe | Val | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Leu | Ser | Val | Gln | Pro | Val | Val | Phe | Gln | Ala | Cys | Glu | Val | Asn | Leu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Thr | Leu | Asp | Asn | Arg | Leu | Asp | Ser | Gln | Gly | Val | Leu | Ser | Thr | Pro | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Tyr | Phe | Pro | Ser | Tyr | Tyr | Ser | Pro | Gln | Thr | His | Cys | Ser | Trp | His | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Leu | Thr | Val | Pro | Ser | Leu | Asp | Tyr | Gly | Leu | Ala | Leu | Trp | Phe | Asp | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Ala | Tyr | Ala | Leu | Arg | Arg | Gln | Lys | Tyr | Asp | Leu | Pro | Cys | Thr | Gln | | | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
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| Gly Gln Trp Thr | Ile Gln Asn Arg Arg | Leu Cys Gly Leu Arg | Ile | | |
| | 395 | | 400 | | 405 |
| Leu Gln Pro Tyr | Ala Glu Arg Ile Pro | Val Val Ala Thr Ala | Gly | | |
| | 410 | | 415 | | 420 |
| Ile Thr Ile Asn | Phe Thr Ser Gln Ile | Ser Leu Thr Gly Pro | Gly | | |
| | 425 | | 430 | | 435 |
| Val Arg Val His | Tyr Gly Leu Tyr Asn | Gln Ser Asp Pro Cys | Pro | | |
| | 440 | | 445 | | 450 |
| Gly Glu Phe Leu | Cys Ser Val Asn Gly | Leu Cys Val Pro Ala | Cys | | |
| | 455 | | 460 | | 465 |
| Asp Gly Val Lys | Asp Cys Pro Asn Gly | Leu Asp Glu Arg Asn | Cys | | |
| | 470 | | 475 | | 480 |
| Val Cys Arg Ala | Thr Phe Gln Cys Lys | Glu Asp Ser Thr Cys | Ile | | |
| | 485 | | 490 | | 495 |
| Ser Leu Pro Lys | Val Cys Asp Gly Gln | Pro Asp Cys Leu Asn | Gly | | |
| | 500 | | 505 | | 510 |
| Ser Asp Glu Glu | Gln Cys Gln Glu Gly | Val Pro Cys Gly Thr | Phe | | |
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| Thr Phe Gln Cys | Glu Asp Arg Ser Cys | Val Lys Lys Pro Asn | Pro | | |
| | 530 | | 535 | | 540 |
| Gln Cys Asp Gly | Arg Pro Asp Cys Arg | Asp Gly Ser Asp Glu | Glu | | |
| | 545 | | 550 | | 555 |
| His Cys Asp Cys | Gly Leu Gln Gly Pro | Ser Ser Arg Ile Val | Gly | | |
| | 560 | | 565 | | 570 |
| Gly Ala Val Ser | Ser Glu Gly Glu Trp | Pro Trp Gln Ala Ser | Leu | | |
| | 575 | | 580 | | 585 |
| Gln Val Arg Gly | Arg His Ile Cys Gly | Gly Ala Leu Ile Ala | Asp | | |
| | 590 | | 595 | | 600 |
| Arg Trp Val Ile | Thr Ala Ala His Cys | Phe Gln Glu Asp Ser | Met | | |
| | 605 | | 610 | | 615 |
| Ala Ser Thr Val | Leu Trp Thr Val Phe | Leu Gly Lys Val Trp | Gln | | |
| | 620 | | 625 | | 630 |
| Asn Ser Arg Trp | Pro Gly Glu Val Ser | Phe Lys Val Ser Arg | Leu | | |
| | 635 | | 640 | | 645 |
| Leu Leu His Pro | Tyr His Glu Glu Asp | Ser His Asp Tyr Asp | Val | | |
| | 650 | | 655 | | 660 |
| Ala Leu Leu Gln | Leu Asp His Pro Val | Val Arg Ser Ala Ala | Val | | |

| | | |
|---|-----|-----|
| 665 | 670 | 675 |
| Arg Pro Val Cys Leu Pro Ala Arg Ser His Phe Phe Glu Pro Gly | | |
| 680 | 685 | 690 |
| Leu His Cys Trp Ile Thr Gly Trp Gly Ala Leu Arg Glu Gly Gly | | |
| 695 | 700 | 705 |
| Pro Ile Ser Asn Ala Leu Gln Lys Val Asp Val Gln Leu Ile Pro | | |
| 710 | 715 | 720 |
| Gln Asp Leu Cys Ser Glu Ala Tyr Arg Tyr Gln Val Thr Pro Arg | | |
| 725 | 730 | 735 |
| Met Leu Cys Ala Gly Tyr Arg Lys Gly Lys Lys Asp Ala Cys Gln | | |
| 740 | 745 | 750 |
| Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Ala Leu Ser Gly Arg | | |
| 755 | 760 | 765 |
| Trp Phe Leu Ala Gly Leu Val Ser Trp Gly Leu Gly Cys Gly Arg | | |
| 770 | 775 | 780 |
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<210> 172

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 172

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<213> Homo sapiens

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<211> 354

<212> PRT

<213> Homo sapiens

<400> 178

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| Cys | Phe | Ala | Ala | Gly | Ser | Pro | Val | Pro | Phe | Gly | Pro | Glu | Gly | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Glu | Asp | Lys | Leu | His | Lys | Pro | Lys | Ala | Thr | Gln | Thr | Glu | Val |
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| Lys | Pro | Ser | Val | Arg | Phe | Asn | Leu | Arg | Thr | Ser | Lys | Asp | Pro | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| His | Glu | Gly | Cys | Tyr | Leu | Ser | Val | Gly | His | Ser | Gln | Pro | Leu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | Cys | Ser | Phe | Asn | Met | Thr | Ala | Lys | Thr | Phe | Phe | Ile | Ile | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Trp | Thr | Met | Ser | Gly | Ile | Phe | Glu | Asn | Trp | Leu | His | Lys | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Ser | Ala | Leu | His | Thr | Arg | Glu | Lys | Asp | Ala | Asn | Val | Val | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Asp | Trp | Leu | Pro | Leu | Ala | His | Gln | Leu | Tyr | Thr | Asp | Ala | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asn | Asn | Thr | Arg | Val | Val | Gly | His | Ser | Ile | Ala | Arg | Met | Leu | Asp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Trp | Leu | Gln | Glu | Lys | Asp | Asp | Phe | Ser | Leu | Gly | Asn | Val | His | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Gly | Tyr | Ser | Leu | Gly | Ala | His | Val | Ala | Gly | Tyr | Ala | Gly | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Phe | Val | Lys | Gly | Thr | Val | Gly | Arg | Ile | Thr | Gly | Leu | Asp | Pro | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Pro | Met | Phe | Glu | Gly | Ala | Asp | Ile | His | Lys | Arg | Leu | Ser | Pro |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Asp | Ala | Asp | Phe | Val | Asp | Val | Leu | His | Thr | Tyr | Thr | Arg | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Phe | Gly | Leu | Ser | Ile | Gly | Ile | Gln | Met | Pro | Val | Gly | His | Ile | Asp |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Tyr | Pro | Asn | Gly | Gly | Asp | Phe | Gln | Pro | Gly | Cys | Gly | Leu | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Val | Leu | Gly | Ser | Ile | Ala | Tyr | Gly | Thr | Ile | Thr | Glu | Val | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Lys | Cys | Glu | His | Glu | Arg | Ala | Val | His | Leu | Phe | Val | Asp | Ser | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |

Val Asn Gln Asp Lys Pro Ser Phe Ala Phe Gln Cys Thr Asp Ser
290 295 300

Asn Arg Phe Lys Lys Gly Ile Cys Leu Ser Cys Arg Lys Asn Arg
305 310 315

Cys Asn Ser Ile Gly Tyr Asn Ala Lys Lys Met Arg Asn Lys Arg
320 325 330

Asn Ser Lys Met Tyr Leu Lys Thr Arg Ala Gly Met Pro Phe Arg
335 340 345

Gly Asn Leu Gln Ser Leu Glu Cys Pro
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<223> Synthetic oligonucleotide probe

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<211> 713

<212> PRT

<213> Homo sapiens

<400> 183

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| Met | Leu | Leu | Ala | Thr | Leu | Leu | Leu | Leu | Leu | Leu | Gly | Gly | Ala | Leu | 1 | 5 | 10 | 15 |
| Ala | His | Pro | Asp | Arg | Ile | Ile | Phe | Pro | Asn | His | Ala | Cys | Glu | Asp | 20 | 25 | 30 | |
| Pro | Pro | Ala | Val | Leu | Glu | Val | Gln | Gly | Thr | Leu | Gln | Arg | Pro | 35 | 40 | 45 | | |
| Leu | Val | Arg | Asp | Ser | Arg | Thr | Ser | Pro | Ala | Asn | Cys | Thr | Trp | Leu | 50 | 55 | 60 | |
| Ile | Leu | Gly | Ser | Lys | Glu | Gln | Thr | Val | Thr | Ile | Arg | Phe | Gln | Lys | 65 | 70 | 75 | |
| Leu | His | Leu | Ala | Cys | Gly | Ser | Glu | Arg | Leu | Thr | Leu | Arg | Ser | Pro | 80 | 85 | 90 | |
| Leu | Gln | Pro | Leu | Ile | Ser | Leu | Cys | Glu | Ala | Pro | Pro | Ser | Pro | Leu | 95 | 100 | 105 | |
| Gln | Leu | Pro | Gly | Gly | Asn | Val | Thr | Ile | Thr | Tyr | Ser | Tyr | Ala | Gly | 110 | 115 | 120 | |
| Ala | Arg | Ala | Pro | Met | Gly | Gln | Gly | Phe | Leu | Leu | Ser | Tyr | Ser | Gln | 125 | 130 | 135 | |
| Asp | Trp | Leu | Met | Cys | Leu | Gln | Glu | Glu | Phe | Gln | Cys | Leu | Asn | His | 140 | 145 | 150 | |
| Arg | Cys | Val | Ser | Ala | Val | Gln | Arg | Cys | Asp | Gly | Val | Asp | Ala | Cys | 155 | 160 | 165 | |
| Gly | Asp | Gly | Ser | Asp | Glu | Ala | Gly | Cys | Ser | Ser | Asp | Pro | Phe | Pro | 170 | 175 | 180 | |
| Gly | Leu | Thr | Pro | Arg | Pro | Val | Pro | Ser | Leu | Pro | Cys | Asn | Val | Thr | | | | |

| 185 | | | | | | | | | | 190 | | | | | 195 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Leu | Glu | Asp | Phe | Tyr | Gly | Val | Phe | Ser | Ser | Pro | Gly | Tyr | Thr | His | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Leu | Ala | Ser | Val | Ser | His | Pro | Gln | Ser | Cys | His | Trp | Leu | Leu | Asp | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Pro | His | Asp | Gly | Arg | Arg | Leu | Ala | Val | Arg | Phe | Thr | Ala | Leu | Asp | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Gly | Phe | Gly | Asp | Ala | Val | His | Val | Tyr | Asp | Gly | Pro | Gly | Pro | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Pro | Glu | Ser | Ser | Arg | Leu | Leu | Arg | Ser | Leu | Thr | His | Phe | Ser | Asn | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gly | Lys | Ala | Val | Thr | Val | Glu | Thr | Leu | Ser | Gly | Gln | Ala | Val | Val | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ser | Tyr | His | Thr | Val | Ala | Trp | Ser | Asn | Gly | Arg | Gly | Phe | Asn | Ala | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Thr | Tyr | His | Val | Arg | Gly | Tyr | Cys | Leu | Pro | Trp | Asp | Arg | Pro | Cys | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Gly | Leu | Gly | Ser | Gly | Leu | Gly | Ala | Gly | Glu | Gly | Leu | Gly | Glu | Arg | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Cys | Tyr | Ser | Glu | Ala | Gln | Arg | Cys | Asp | Gly | Ser | Trp | Asp | Cys | Ala | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Asp | Gly | Thr | Asp | Glu | Glu | Asp | Cys | Pro | Gly | Cys | Pro | Pro | Gly | His | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Phe | Pro | Cys | Gly | Ala | Ala | Gly | Thr | Ser | Gly | Ala | Thr | Ala | Cys | Tyr | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Leu | Pro | Ala | Asp | Arg | Cys | Asn | Tyr | Gln | Thr | Phe | Cys | Ala | Asp | Gly | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Ala | Asp | Glu | Arg | Arg | Cys | Arg | His | Cys | Gln | Pro | Gly | Asn | Phe | Arg | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Cys | Arg | Asp | Glu | Lys | Cys | Val | Tyr | Glu | Thr | Trp | Val | Cys | Asp | Gly | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Gln | Pro | Asp | Cys | Ala | Asp | Gly | Ser | Asp | Glu | Trp | Asp | Cys | Ser | Tyr | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Val | Leu | Pro | Arg | Lys | Val | Ile | Thr | Ala | Ala | Val | Ile | Gly | Ser | Leu | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Val | Cys | Gly | Leu | Leu | Leu | Val | Ile | Ala | Leu | Gly | Cys | Thr | Cys | Lys | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Leu | Tyr | Ala | Ile | Arg | Thr | Gln | Glu | Tyr | Ser | Ile | Phe | Ala | Pro | Leu | | | | | |

| 470 | | | | | | | | | | 475 | | | | | 480 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ser | Arg | Met | Glu | Ala | Glu | Ile | Val | Gln | Gln | Gln | Ala | Pro | Pro | Ser | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Tyr | Gly | Gln | Leu | Ile | Ala | Gln | Gly | Ala | Ile | Pro | Pro | Val | Glu | Asp | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Phe | Pro | Thr | Glu | Asn | Pro | Asn | Asp | Asn | Ser | Val | Leu | Gly | Asn | Leu | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Arg | Ser | Leu | Leu | Gln | Ile | Leu | Arg | Gln | Asp | Met | Thr | Pro | Gly | Gly | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Gly | Pro | Gly | Ala | Arg | Arg | Arg | Gln | Arg | Gly | Arg | Leu | Met | Arg | Arg | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Leu | Val | Arg | Arg | Leu | Arg | Arg | Trp | Gly | Leu | Leu | Pro | Arg | Thr | Asn | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Thr | Pro | Ala | Arg | Ala | Ser | Glu | Ala | Arg | Ser | Gln | Val | Thr | Pro | Ser | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Ala | Ala | Pro | Leu | Glu | Ala | Leu | Asp | Gly | Gly | Thr | Gly | Pro | Ala | Arg | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Glu | Gly | Gly | Ala | Val | Gly | Gly | Gln | Asp | Gly | Glu | Gln | Ala | Pro | Pro | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Leu | Pro | Ile | Lys | Ala | Pro | Leu | Pro | Ser | Ala | Ser | Thr | Ser | Pro | Ala | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Pro | Thr | Thr | Val | Pro | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Ser | Leu | Pro | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Leu | Glu | Pro | Ser | Leu | Leu | Ser | Gly | Val | Val | Gln | Ala | Leu | Arg | Gly | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Arg | Leu | Leu | Pro | Ser | Leu | Gly | Pro | Pro | Gly | Pro | Thr | Arg | Ser | Pro | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Pro | Gly | Pro | His | Thr | Ala | Val | Leu | Ala | Leu | Glu | Asp | Glu | Asp | Asp | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Val | Leu | Leu | Val | Pro | Leu | Ala | Glu | Pro | Gly | Val | Trp | Val | Ala | Glu | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Ala | Glu | Asp | Glu | Pro | Leu | Leu | Thr | | | | | | | | | | | | |
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<223> Synthetic oligonucleotide probe

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<210> 185
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<220>
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<400> 185
gcaaggcat tacagctg 18

<210> 186
<211> 23
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<220>
<223> Synthetic oligonucleotide probe

<400> 186
agaacatagg agcagtcacca ctc 23

<210> 187
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<220>
<223> Synthetic oligonucleotide probe

<400> 187
tgctgtctgc tgcacaatct cag 23

<210> 188
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<212> DNA
<213> Homo sapiens

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gctatcgctt cgcagaacct actcaggcag ccagctgaga agagttgagg 100

gaaagtgctg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150
 aataaaacat cgcccccttct gcttcagtgt gaaaggccac gtgaagatgc 200
 tgcggctggc actaactgtg acatctatga ccttttttat catcgacaaa 250
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 tttttagttt gatactaagt attaaacata tttctgtatt cttccaaaaa 650
 aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Asn | Val | Gln | Pro | Lys | Ile | Lys | His | Arg | Pro | Phe | Cys | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Lys | Gly | His | Val | Lys | Met | Leu | Arg | Leu | Ala | Leu | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Met | Thr | Phe | Phe | Ile | Ile | Ala | Gln | Ala | Pro | Glu | Pro | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Val | Ile | Thr | Gly | Phe | Glu | Val | Thr | Val | Ile | Leu | Phe | Phe | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Tyr | Val | Leu | Arg | Leu | Asp | Arg | Leu | Met | Lys | Trp | Leu | Phe |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Pro | Leu | Leu | Asp | Ile | Ile | Asn | Ser | Leu | Val | Thr | Thr | Val | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Ile | Val | Ser | Val | Leu | Ala | Leu | Ile | Pro | Glu | Thr | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Val | Gly | Gly | Gly | Val | Phe | Ala | Leu | Val | Thr | Ala | Val | Cys |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Leu | Ala | Asp | Gly | Ala | Leu | Ile | Tyr | Arg | Lys | Leu | Leu | Phe | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |

Pro Ser Gly Pro Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu
140 145 150

Val Leu

<210> 191
<211> 495
<212> DNA
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<220>
<221> unsure
<222> 78, 212, 234, 487
<223> unknown base

<400> 191
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ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150
catgccccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250
aaccatatat tgttatcact ggatttgaag tcaccgttat cttatttttc 300
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350
gcctttgctt gatattatca actcactggg aacaacagta ttcattgctca 400
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggg 450
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<210> 192
<211> 25
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
cgttttgcag aacctactca ggcag 25

<210> 193
<211> 25
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 193

cctccaccaa ctgtcaatgt tgtgg 25

<210> 194

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 194

aaagtgtgc tgctgggtct gcagacgcga tggataacgt 40

<210> 195

<211> 1879

<212> DNA

<213> Homo sapien

<400> 195

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cactggcccc ggcgctgctg ctgcctctgc tggcccagtg gctcctgcgc 150

gccgccccgg agctggcccc cgcgcccttc acgctgcccc tccgggtggc 200

cgcgggccacg aaccgcgtag ttgcgcccac cccgggaccc gggaccctg 250

ccgagcgcca cgccgacggc ttggcgctcg ccctggagcc tgcctggcg 300

tcccccgagg ggcgcgcaa cttcttggcc atggtagaca acctgcaggg 350

ggactctggc cgcggtact acctggagat gctgatcggg accccccgc 400

agaagctaca gattctcgtt gacactggaa gcagtaactt tgccgtggca 450

ggaacccgc actcctacat agacacgtac ttgacacag agaggtctag 500

cacataccgc tccaagggtt ttgacgtcac agtgaagtac acacaaggaa 550

gctggacggg cttcgttggg gaagacctcg tcaccatccc caaaggcttc 600

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acacaagcaa acatccccaa cgttttctcc atgcagatgt gtggagccgg 800

cttgcccggt gctggatctg ggaccaacgg aggtagtctt gtcttgggtg 850

gaattgaacc aagtttgtat aaaggagaca tctggtatac ccctattaag 900

gaagagtggg actaccagat agaaattctg aaattggaaa ttggaggcca 950

aagccttaat ctggactgca gagagtataa cgcagacaag gccatcgtgg 1000
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<210> 196

<211> 518

<212> PRT.

<213> Homo sapien

<400> 196

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Leu | Ala | Arg | Ala | Leu | Leu | Leu | Pro | Leu | Leu | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Leu | Arg | Ala | Ala | Pro | Glu | Leu | Ala | Pro | Ala | Pro | Phe | Thr |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Arg | Val | Ala | Ala | Ala | Thr | Asn | Arg | Val | Val | Ala | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Gly | Pro | Gly | Thr | Pro | Ala | Glu | Arg | His | Ala | Asp | Gly | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Ala | Leu | Ala | Leu | Glu | Pro | Ala | Leu | Ala | Ser | Pro | Ala | Gly | Ala | Ala | | 65 | 70 | 75 |
| Asn | Phe | Leu | Ala | Met | Val | Asp | Asn | Leu | Gln | Gly | Asp | Ser | Gly | Arg | | 80 | 85 | 90 |
| Gly | Tyr | Tyr | Leu | Glu | Met | Leu | Ile | Gly | Thr | Pro | Pro | Gln | Lys | Leu | | 95 | 100 | 105 |
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly | | 110 | 115 | 120 |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser | | 125 | 130 | 135 |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr | | 140 | 145 | 150 |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile | | 155 | 160 | 165 |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile | | 170 | 175 | 180 |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly | | 185 | 190 | 195 |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser | | 200 | 205 | 210 |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro | | 215 | 220 | 225 |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala | | 230 | 235 | 240 |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu | | 245 | 250 | 255 |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu | | 260 | 265 | 270 |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly | | 275 | 280 | 285 |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala | | 290 | 295 | 300 |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val | | 305 | 310 | 315 |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro | | 320 | 325 | 330 |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp | | 335 | 340 | 345 |

| | | |
|-----------------|---------------------|-------------------------|
| Thr Asn Ser Glu | Thr Pro Trp Ser Tyr | Phe Pro Lys Ile Ser Ile |
| 350 | 355 | 360 |
| Tyr Leu Arg Asp | Glu Asn Ser Ser Arg | Ser Phe Arg Ile Thr Ile |
| 365 | 370 | 375 |
| Leu Pro Gln Leu | Tyr Ile Gln Pro Met | Met Gly Ala Gly Leu Asn |
| 380 | 385 | 390 |
| Tyr Glu Cys Tyr | Arg Phe Gly Ile Ser | Pro Ser Thr Asn Ala Leu |
| 395 | 400 | 405 |
| Val Ile Gly Ala | Thr Val Met Glu Gly | Phe Tyr Val Ile Phe Asp |
| 410 | 415 | 420 |
| Arg Ala Gln Lys | Arg Val Gly Phe Ala | Ala Ser Pro Cys Ala Glu |
| 425 | 430 | 435 |
| Ile Ala Gly Ala | Ala Val Ser Glu Ile | Ser Gly Pro Phe Ser Thr |
| 440 | 445 | 450 |
| Glu Asp Val Ala | Ser Asn Cys Val Pro | Ala Gln Ser Leu Ser Glu |
| 455 | 460 | 465 |
| Pro Ile Leu Trp | Ile Val Ser Tyr Ala | Leu Met Ser Val Cys Gly |
| 470 | 475 | 480 |
| Ala Ile Leu Leu | Val Leu Ile Val Leu | Leu Leu Leu Pro Phe Arg |
| 485 | 490 | 495 |
| Cys Gln Arg Arg | Pro Arg Asp Pro Glu | Val Val Asn Asp Glu Ser |
| 500 | 505 | 510 |
| Ser Leu Val Arg | His Arg Trp Lys | |
| 515 | | |

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<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 197

cgcagaagct acagattctc g 21

<210> 198

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 198

ggaaattgga ggccaaagc 19

<210> 199
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 199
ggatgtagcc agcaactgtg 20

<210> 200
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 200
gccttggtc gttctcttc 19

<210> 201
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 201
ggtcctgtgc ctggatgg 18

<210> 202
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 202
gacaagacta cctccgttgg tc 22

<210> 203
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 203
tgatgcacag ttcagcacct gttg 24

<210> 204

<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 204
cgctccaagg gctttgacgt cacagtgaag tacacacaag gaagctg 47

<210> 205
<211> 1939
<212> DNA
<213> Homo sapiens

<400> 205
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gggcgggagc cgggaggcgc ggccggcatg gaggcgctgc tgctgggcgc 150
ggggttgctg ctgggcgctt acgtgcttgt ctactacaac ctggtgaagg 200
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 cagggcaggg cagctggtat cgaggtgccc catgggagta aggggacgcc 1850
 ttccgggcgg atgcagggct ggggtcatct gtatctgaag cccctcgga 1900
 taaagcgcgt tgaccgccaa aaaaaaaaaa aaaaaaaaaa 1939

<210> 206

<211> 377

<212> PRT

<213> Homo sapiens

<400> 206

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Leu | Leu | Leu | Gly | Ala | Gly | Leu | Leu | Gly | Ala | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Val | Tyr | Tyr | Asn | Leu | Val | Lys | Ala | Pro | Pro | Cys | Gly | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Asn | Leu | Arg | Gly | Arg | Thr | Ala | Val | Val | Thr | Gly | Ala | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ile | Gly | Lys | Met | Thr | Ala | Leu | Glu | Leu | Ala | Arg | Arg | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Val | Val | Leu | Ala | Cys | Arg | Ser | Gln | Glu | Arg | Gly | Glu | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | |
|---|-----|-----|-----|
| Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile | 80 | 85 | 90 |
| Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe | 95 | 100 | 105 |
| Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile | 110 | 115 | 120 |
| His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe | 125 | 130 | 135 |
| Asn Leu Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr | 140 | 145 | 150 |
| His Leu Leu Leu Pro Cys Leu Lys Ala Cys Ala Pro Ser Arg Val | 155 | 160 | 165 |
| Val Val Val Ala Ser Ala Ala His Cys Arg Gly Arg Leu Asp Phe | 170 | 175 | 180 |
| Lys Arg Leu Asp Arg Pro Val Val Gly Trp Arg Gln Glu Leu Arg | 185 | 190 | 195 |
| Ala Tyr Ala Asp Thr Lys Leu Ala Asn Val Leu Phe Ala Arg Glu | 200 | 205 | 210 |
| Leu Ala Asn Gln Leu Glu Ala Thr Gly Val Thr Cys Tyr Ala Ala | 215 | 220 | 225 |
| His Pro Gly Pro Val Asn Ser Glu Leu Phe Leu Arg His Val Pro | 230 | 235 | 240 |
| Gly Trp Leu Arg Pro Leu Leu Arg Pro Leu Ala Trp Leu Val Leu | 245 | 250 | 255 |
| Arg Ala Pro Arg Gly Gly Ala Gln Thr Pro Leu Tyr Cys Ala Leu | 260 | 265 | 270 |
| Gln Glu Gly Ile Glu Pro Leu Ser Gly Arg Tyr Phe Ala Asn Cys | 275 | 280 | 285 |
| His Val Glu Glu Val Pro Pro Ala Ala Arg Asp Asp Arg Ala Ala | 290 | 295 | 300 |
| His Arg Leu Trp Glu Ala Ser Lys Arg Leu Ala Gly Leu Gly Pro | 305 | 310 | 315 |
| Gly Glu Asp Ala Glu Pro Asp Glu Asp Pro Gln Ser Glu Asp Ser | 320 | 325 | 330 |
| Glu Ala Pro Ser Ser Leu Ser Thr Pro His Pro Glu Glu Pro Thr | 335 | 340 | 345 |
| Val Ser Gln Pro Tyr Pro Ser Pro Gln Ser Ser Pro Asp Leu Ser | 350 | 355 | 360 |

Lys Met Thr His Arg Ile Gln Ala Lys Val Glu Pro Glu Ile Gln
365 370 375

Leu Ser

<210> 207

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 207

cttcatggcc ttgacttg ccag 24

<210> 208

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 208

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<210> 209

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 209

ctttctgagc tctgagccac ggttgacat cctcatccac aatgc 45

<210> 210

<211> 3716

<212> DNA

<213> Homo sapiens

<400> 210

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gctcatcatg ggaggcatgg ctcaggactc cccgccccag atcctagtc 100

acccccagga ccagctgttc cagggccctg gccctgccag gatgagctgc 150

caagcctcag gccagccacc tcccaccatc cgctggttgc tgaatgggca 200

gcccctgagc atggtgcccc cagaccaca ccacctctg cctgatggga 250

cccttctgct gctacagccc cctgcccggg gacatgccca cgatggccag 300

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 <211> 985
 <212> PRT
 <213> Homo sapiens

<400> 211
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 20 25 30
 Cys Gln Ala Ser Gly Gln Pro Pro Pro Thr Ile Arg Trp Leu Leu
 35 40 45
 Asn Gly Gln Pro Leu Ser Met Val Pro Pro Asp Pro His His Leu
 50 55 60
 Leu Pro Asp Gly Thr Leu Leu Leu Leu Gln Pro Pro Ala Arg Gly
 65 70 75
 His Ala His Asp Gly Gln Ala Leu Ser Thr Asp Leu Gly Val Tyr
 80 85 90
 Thr Cys Glu Ala Ser Asn Arg Leu Gly Thr Ala Val Ser Arg Gly
 95 100 105
 Ala Arg Leu Ser Val Ala Val Leu Arg Glu Asp Phe Gln Ile Gln
 110 115 120
 Pro Arg Asp Met Val Ala Val Val Gly Glu Gln Phe Thr Leu Glu
 125 130 135

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Cys Gly Pro Pro | Trp Gly His Pro Glu | Pro Thr Val Ser Trp Trp | 140 | 145 | 150 |
| Lys Asp Gly Lys | Pro Leu Ala Leu Gln | Pro Gly Arg His Thr Val | 155 | 160 | 165 |
| Ser Gly Gly Ser | Leu Leu Met Ala Arg | Ala Glu Lys Ser Asp Glu | 170 | 175 | 180 |
| Gly Thr Tyr Met | Cys Val Ala Thr Asn | Ser Ala Gly His Arg Glu | 185 | 190 | 195 |
| Ser Arg Ala Ala | Arg Val Ser Ile Gln | Glu Pro Gln Asp Tyr Thr | 200 | 205 | 210 |
| Glu Pro Val Glu | Leu Leu Ala Val Arg | Ile Gln Leu Glu Asn Val | 215 | 220 | 225 |
| Thr Leu Leu Asn | Pro Asp Pro Ala Glu | Gly Pro Lys Pro Arg Pro | 230 | 235 | 240 |
| Ala Val Trp Leu | Ser Trp Lys Val Ser | Gly Pro Ala Ala Pro Ala | 245 | 250 | 255 |
| Gln Ser Tyr Thr | Ala Leu Phe Arg Thr | Gln Thr Ala Pro Gly Gly | 260 | 265 | 270 |
| Gln Gly Ala Pro | Trp Ala Glu Glu Leu | Leu Ala Gly Trp Gln Ser | 275 | 280 | 285 |
| Ala Glu Leu Gly | Gly Leu His Trp Gly | Gln Asp Tyr Glu Phe Lys | 290 | 295 | 300 |
| Val Arg Pro Ser | Ser Gly Arg Ala Arg | Gly Pro Asp Ser Asn Val | 305 | 310 | 315 |
| Leu Leu Leu Arg | Leu Pro Glu Lys Val | Pro Ser Ala Pro Pro Gln | 320 | 325 | 330 |
| Glu Val Thr Leu | Lys Pro Gly Asn Gly | Thr Val Phe Val Ser Trp | 335 | 340 | 345 |
| Val Pro Pro Pro | Ala Glu Asn His Asn | Gly Ile Ile Arg Gly Tyr | 350 | 355 | 360 |
| Gln Val Trp Ser | Leu Gly Asn Thr Ser | Leu Pro Pro Ala Asn Trp | 365 | 370 | 375 |
| Thr Val Val Gly | Glu Gln Thr Gln Leu | Glu Ile Ala Thr His Met | 380 | 385 | 390 |
| Pro Gly Ser Tyr | Cys Val Gln Val Ala | Ala Val Thr Gly Ala Gly | 395 | 400 | 405 |
| Ala Gly Glu Pro | Ser Arg Pro Val Cys | Leu Leu Leu Glu Gln Ala | 410 | 415 | 420 |

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|-----|-----|-----|
| Met | Glu | Arg | Ala | Thr | Gln | Glu | Pro | Ser | Glu | His | Gly | Pro | Trp | Thr | | | | 425 | 430 | 435 |
| Leu | Glu | Gln | Leu | Arg | Ala | Thr | Leu | Lys | Arg | Pro | Glu | Val | Ile | Ala | | | | 440 | 445 | 450 |
| Thr | Cys | Gly | Val | Ala | Leu | Trp | Leu | Leu | Leu | Leu | Gly | Thr | Ala | Val | | | | 455 | 460 | 465 |
| Cys | Ile | His | Arg | Arg | Arg | Arg | Ala | Arg | Val | His | Leu | Gly | Pro | Gly | | | | 470 | 475 | 480 |
| Leu | Tyr | Arg | Tyr | Thr | Ser | Glu | Asp | Ala | Ile | Leu | Lys | His | Arg | Met | | | | 485 | 490 | 495 |
| Asp | His | Ser | Asp | Ser | Gln | Trp | Leu | Ala | Asp | Thr | Trp | Arg | Ser | Thr | | | | 500 | 505 | 510 |
| Ser | Gly | Ser | Arg | Asp | Leu | Ser | Ser | Ser | Ser | Ser | Leu | Ser | Ser | Arg | | | | 515 | 520 | 525 |
| Leu | Gly | Ala | Asp | Ala | Arg | Asp | Pro | Leu | Asp | Cys | Arg | Arg | Ser | Leu | | | | 530 | 535 | 540 |
| Leu | Ser | Trp | Asp | Ser | Arg | Ser | Pro | Gly | Val | Pro | Leu | Leu | Pro | Asp | | | | 545 | 550 | 555 |
| Thr | Ser | Thr | Phe | Tyr | Gly | Ser | Leu | Ile | Ala | Glu | Leu | Pro | Ser | Ser | | | | 560 | 565 | 570 |
| Thr | Pro | Ala | Arg | Pro | Ser | Pro | Gln | Val | Pro | Ala | Val | Arg | Arg | Leu | | | | 575 | 580 | 585 |
| Pro | Pro | Gln | Leu | Ala | Gln | Leu | Ser | Ser | Pro | Cys | Ser | Ser | Ser | Asp | | | | 590 | 595 | 600 |
| Ser | Leu | Cys | Ser | Arg | Arg | Gly | Leu | Ser | Ser | Pro | Arg | Leu | Ser | Leu | | | | 605 | 610 | 615 |
| Ala | Pro | Ala | Glu | Ala | Trp | Lys | Ala | Lys | Lys | Lys | Gln | Glu | Leu | Gln | | | | 620 | 625 | 630 |
| His | Ala | Asn | Ser | Ser | Pro | Leu | Leu | Arg | Gly | Ser | His | Ser | Leu | Glu | | | | 635 | 640 | 645 |
| Leu | Arg | Ala | Cys | Glu | Leu | Gly | Asn | Arg | Gly | Ser | Lys | Asn | Leu | Ser | | | | 650 | 655 | 660 |
| Gln | Ser | Pro | Gly | Ala | Val | Pro | Gln | Ala | Leu | Val | Ala | Trp | Arg | Ala | | | | 665 | 670 | 675 |
| Leu | Gly | Pro | Lys | Leu | Leu | Ser | Ser | Ser | Asn | Glu | Leu | Val | Thr | Arg | | | | 680 | 685 | 690 |
| His | Leu | Pro | Pro | Ala | Pro | Leu | Phe | Pro | His | Glu | Thr | Pro | Pro | Thr | | | | 695 | 700 | 705 |

| | | | |
|---|-----|-----|-----|
| Gln Ser Gln Gln Thr Gln Pro Pro Val Ala Pro Gln Ala Pro Ser | 710 | 715 | 720 |
| Ser Ile Leu Leu Pro Ala Ala Pro Ile Pro Ile Leu Ser Pro Cys | 725 | 730 | 735 |
| Ser Pro Pro Ser Pro Gln Ala Ser Ser Leu Ser Gly Pro Ser Pro | 740 | 745 | 750 |
| Ala Ser Ser Arg Leu Ser Ser Ser Ser Leu Ser Ser Leu Gly Glu | 755 | 760 | 765 |
| Asp Gln Asp Ser Val Leu Thr Pro Glu Glu Val Ala Leu Cys Leu | 770 | 775 | 780 |
| Glu Leu Ser Glu Gly Glu Glu Thr Pro Arg Asn Ser Val Ser Pro | 785 | 790 | 795 |
| Met Pro Arg Ala Pro Ser Pro Pro Thr Thr Tyr Gly Tyr Ile Ser | 800 | 805 | 810 |
| Val Pro Thr Ala Ser Glu Phe Thr Asp Met Gly Arg Thr Gly Gly | 815 | 820 | 825 |
| Gly Val Gly Pro Lys Gly Gly Val Leu Leu Cys Pro Pro Arg Pro | 830 | 835 | 840 |
| Cys Leu Thr Pro Thr Pro Ser Glu Gly Ser Leu Ala Asn Gly Trp | 845 | 850 | 855 |
| Gly Ser Ala Ser Glu Asp Asn Ala Ala Ser Ala Arg Ala Ser Leu | 860 | 865 | 870 |
| Val Ser Ser Ser Asp Gly Ser Phe Leu Ala Asp Ala His Phe Ala | 875 | 880 | 885 |
| Arg Ala Leu Ala Val Ala Val Asp Ser Phe Gly Phe Gly Leu Glu | 890 | 895 | 900 |
| Pro Arg Glu Ala Asp Cys Val Phe Ile Asp Ala Ser Ser Pro Pro | 905 | 910 | 915 |
| Ser Pro Arg Asp Glu Ile Phe Leu Thr Pro Asn Leu Ser Leu Pro | 920 | 925 | 930 |
| Leu Trp Glu Trp Arg Pro Asp Trp Leu Glu Asp Met Glu Val Ser | 935 | 940 | 945 |
| His Thr Gln Arg Leu Gly Arg Gly Met Pro Pro Trp Pro Pro Asp | 950 | 955 | 960 |
| Ser Gln Ile Ser Ser Gln Arg Ser Gln Leu His Cys Arg Met Pro | 965 | 970 | 975 |
| Lys Ala Gly Ala Ser Pro Val Asp Tyr Ser | 980 | 985 | |

<210> 212
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 212
gaaggacct acatgtgtgt ggcc 24

<210> 213
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 213
actgaccttc cagctgagcc acac 24

<210> 214
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 214
aggactacac ggagcctgtg gagcttctgg ctgtgcgaat tcagctggaa 50

<210> 215
<211> 2749
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1869, 1887
<223> unknown base

<400> 215
ctcccacggt gtccagcgcc cagaatgcgg cttctggtcc tgctatgggg 50
ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100
gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150
ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200
tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250
agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300

accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtggggt 350
cgaaaaacgg ggccccgatg agtcttttact gatctctctg ttcgtctttc 400
caggaccctg ctgtcctccc tccccctctc ccaccttcca gcctctggct 450
acaacacgcc tgcagcccaa ggcaaaagct cagcaaacc agccccagg 500
attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550
agacaggggc tgaggcccct ccattgccag ggacttcca gtacgggcac 600
gaaaggactt ctcagtacac aggaacctct cctcaccag cgacctctcc 650
tcctgcaggg agtccccgcc ccccatgca gctggactcc acctcagcag 700
aggacaccag tccagctctc agcagtggca gctctaagcc cagggtgtcc 750
atcccgatgg tccgcatact ggccccagtc ctggtgctgc tgagccttct 800
gtcagccgca ggctgatcg cttctgcag ccacctgctc ctgtggagaa 850
aggaagctca acaggccacg gagacacaga ggaacgagaa gttctggctc 900
tcacgcttga ctgcgaggga aaaggaagcc ccttcccagg cccctgaggg 950
ggacgtgatc tcgatgcctc ccctccacac atctgaggag gagctgggct 1000
tctcgaagtt tgtctcagcg tagggcagga ggccctcctg gccaggccag 1050
cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100
cacctcagcc tcagagtcca gctgcccgga ctccagggt ctccccacc 1150
tccccaggct ctctcttgc atgttccagc ctgacctaga agcgtttgtc 1200
agccctggag ccagagcgg tggccttgct cttccggctg gagactggga 1250
catccctgat aggttcacat ccctgggcag agtaccagc tgctgaccct 1300
cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350
aggaactcct gggcctcatg ccagtgctg gacctgcct tcctcccact 1400
ccagacccca ccttgtcttc cctccctggc gtctcagac ttagtccac 1450
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ggattctggc ttctctttga accacctgca tccagccctt caggaagcct 1550
gtgaaaaacg tgattcctgg ccccaaccaag acccaacaaa accatctctg 1600
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tgagtttgag ggccagtggg cctgatgaac gctcacacc cttcagctta 1700
gagtctgcat ttgggctgtg acgtctccac ctgcccgaat agatctgctc 1750

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 caggccttgg tcaggtcagg tgcacattgc aggataagcc caggaccggc 1850
 acagaagtgg ttgcctttnc catttgcctt ccttggacca tgccttcttg 1900
 cctttggaaa aaatgatgaa gaaaaccttg gctccttcct tgtctggaaa 1950
 ggggttacttg cctatgggtt ctgggtggcta gagagaaaag tagaaaacca 2000
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 ctgaaggtga ctccgagtc agccccctgg agaaggggtc ggggggtggtg 2100
 gtaaagtagc acaactacta ttttttttct ttttccatta ttattgtttt 2150
 ttaagacaga atctcgtgct gctgccagg ctggagtgca gtggcacgat 2200
 ctgcaaactc cgctcctgg gttcaagtga ttcttctgcc tcagcctccc 2250
 gagtagctgg gattacaggc acgcaccacc acacctggt aatttttgta 2300
 cttttagtag agatgggggtt tcaccatgtt ggccaggctg gtcttgaact 2350
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 caggcatgag ccactgtgtc tggccctatt tcctttaaaa agtgaaatta 2450
 agagttgttc agtatgcaaa acttggaag atggaggaga aaaagaaaag 2500
 gaagaaaaaa atgtcaccca tagtctcacc agagactatc attatttcgt 2550
 tttgtgttac ttcttccac tcttttcttc ttacataat ttgccggtgt 2600
 tctttttaca gagcaattat cttgtatata caactttgta tctgccttt 2650
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 gaccttttta taaataaaat gttcatcagc tgcataaaaa aaaaaaaaaa 2749

<210> 216

<211> 332

<212> PRT

<213> Homo sapiens

<400> 216

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |

His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg

[illegible]

<210> 217
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 217
ccctgcagtg cacctacagg gaag 24

<210> 218
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 218
ctgtcttccc ctgcttggt gtgg 24

<210> 219
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 219
ggtgcaggaa ggggtgggata ctcttctctc gctgctctgg ccacatc 47

<210> 220
<211> 950
<212> DNA
<213> Homo sapiens

<400> 220
ttgtgactaa aagctggcct agcaggccag ggagtgcagc tgcaggcgtg 50
ggggtggcag gagccgcaga gccagagcag acagccgaga aacagggtgga 100
cagtgtgaaa gaaccagtgg tctcgctctg ttgccaggc tagagtgtac 150
tggcgtgata atagctcact gcagcctcag actcctggac ttgagaaatc 200
ctcctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
cctgtttctt ctcttctgt gagggtgacca cggaggctgg tgagctgcct 300
gtcatcccaa agctcagctc tgagccagag tgggtggtggc tccacctctg 350
ccgccggcat agaagccagg agcagggctc tcagaaggcg gtggtgccca 400

gctgggatca tgttgttggc cctgggtctgt ctgctcagct gcctgctacc 450
ctccagttag gccaaagtct acggtcggtt tgaactggcc agagtgtac 500
atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550
tgcttgcctt atttcacaag cggtttcaac gcagctgctt tggactacga 600
ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggaggt 650
ggtgcagcaa cctcaccctg aacgtcccca acgtgtgccg gatgtactgc 700
tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750
gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800
actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850
gatggacgga accatgcaca gcaggctggg aaatgtggtt tggttcctga 900
cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<210> 221

<211> 146

<212> PRT

<213> Homo sapiens

<400> 221

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Leu | Ala | Leu | Val | Cys | Leu | Leu | Ser | Cys | Leu | Leu | Pro | Ser | 1 | 5 | 10 | 15 |
| Ser | Glu | Ala | Lys | Leu | Tyr | Gly | Arg | Cys | Glu | Leu | Ala | Arg | Val | Leu | 20 | 25 | 30 | |
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | 35 | 40 | 45 | |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | 50 | 55 | 60 | |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | 65 | 70 | 75 | |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | 80 | 85 | 90 | |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | 95 | 100 | 105 | |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | 110 | 115 | 120 | |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | 125 | 130 | 135 | |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe | 140 | 145 | | | | | | |

<210> 222
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 222
gggatcatgt tgttggccct ggtc 24

<210> 223
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 223
gcaaggcaga ccagtcagc cag 23

<210> 224
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 224
ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225
<211> 2049
<212> DNA
<213> Homo sapiens

<400> 225
agccgctgcc ccgggccggg cgcccgggc ggcacatga gtccccgctc 50
gtgcctgcgt tcgctgcgcc tctcgtctt cgccgtcttc tcagccgccg 100
cgagcaactg gctgtacctg gccaaactgt cgtcgggtggg gagcatctca 150
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcagggtgca 200
gatgtgcaag cggaacctgg aagtcattga ctccgtgcgc cgccgtgccc 250
agctggccat tgaggagtgc cagtcaccgt tccggaaccg gcgctggaac 300
tgctccacac tcgactcctt gcccgctctc ggcaagggtg tgacgcaagg 350
gactcgggag gcggccttcg tgtacgcat ctcttcggca ggtgtggcct 400
ttgcagtgc gcgggcgtgc agcagtgggg agctggagaa gtgcggctgt 450

gacaggacag tgcattgggt cagcccacag ggcttccagt ggtcaggatg 500
ctctgacaac atcgcttacg gtgtggcctt ctcacagtgc tttgtggatg 550
tgccgggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600
cacaacaatg aggccggcag gaaggccatc ctgacacaca tgcgggtgga 650
atgcaagtgc cacgggggtg caggctcctg tgaggtaaag acgtgctggc 700
gagccgtgcc gcccttccgc cagggtgggtc acgcactgaa ggagaagttt 750
gatggtgcc ctgagggtgga gccacgccgc gtgggctcct ccagggcact 800
ggtaccacgc aacgcacagt tcaagccgca cacagatgag gacctggtgt 850
acttgagacc tagccccgac ttctgtgagc aggacatgcg cagcggcgtg 900
ctgggcacga ggggccgcac atgcaacaag acgtccaagg ccatcgacgg 950
ctgtgagctg ctgtgctgtg gccgcggctt ccacacggcg cagggtggagc 1000
tggtgaacg ctgcagctgc aaattccact ggtgctgctt cgtcaagtgc 1050
cggcagtgcc agcggctcgt ggagttgcac acgtgccgat gaccgcctgc 1100
ctagccctgc gccggcaacc acctagtggc ccagggaagg ccgataattt 1150
aaacagtctc ccaccaccta cccaagaga tactggttgt attttttgtt 1200
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acctaagggtg gagtaacaag gagtattacc accacatggc tactgaccgt 1450
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ccctgagaaa ggaacaagc agataccagg tcaagggcac caggttcatt 1650
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agaccacct aggcaggcat ataggctgcc atcctggacc agggatcccg 1850

gctgtgcctt tgcagtcacg cccgagtcac ctttcacagc gctgttcctc 1900
catgaaactg aaaaacacac acacacacac acacacacac acacacacac 1950
acacacacac ggacacacac acacacctgc gagagagagg gaggaagg 2000
ctgtgccttt gcagtcacg cccgagtcacc tttcacagca ctgttcctc 2049

<210> 226
<211> 351
<212> PRT
<213> Homo sapiens

<400> 226

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Pro | Arg | Ser | Cys | Leu | Arg | Ser | Leu | Arg | Leu | Leu | Val | Phe | 1 | 5 | 10 | 15 |
| Ala | Val | Phe | Ser | Ala | Ala | Ala | Ser | Asn | Trp | Leu | Tyr | Leu | Ala | Lys | 20 | 25 | 30 | |
| Leu | Ser | Ser | Val | Gly | Ser | Ile | Ser | Glu | Glu | Glu | Thr | Cys | Glu | Lys | 35 | 40 | 45 | |
| Leu | Lys | Gly | Leu | Ile | Gln | Arg | Gln | Val | Gln | Met | Cys | Lys | Arg | Asn | 50 | 55 | 60 | |
| Leu | Glu | Val | Met | Asp | Ser | Val | Arg | Arg | Gly | Ala | Gln | Leu | Ala | Ile | 65 | 70 | 75 | |
| Glu | Glu | Cys | Gln | Tyr | Gln | Phe | Arg | Asn | Arg | Arg | Trp | Asn | Cys | Ser | 80 | 85 | 90 | |
| Thr | Leu | Asp | Ser | Leu | Pro | Val | Phe | Gly | Lys | Val | Val | Thr | Gln | Gly | 95 | 100 | 105 | |
| Thr | Arg | Glu | Ala | Ala | Phe | Val | Tyr | Ala | Ile | Ser | Ser | Ala | Gly | Val | 110 | 115 | 120 | |
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys | 125 | 130 | 135 | |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe | 140 | 145 | 150 | |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe | 155 | 160 | 165 | |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser | 170 | 175 | 180 | |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg | 185 | 190 | 195 | |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly | 200 | 205 | 210 | |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro | | | | |

| | 215 | 220 | 225 |
|---|-----|-----|-----|
| Pro Phe Arg Gln Val Gly His Ala Leu Lys Glu Lys Phe Asp Gly | 230 | 235 | 240 |
| Ala Thr Glu Val Glu Pro Arg Arg Val Gly Ser Ser Arg Ala Leu | 245 | 250 | 255 |
| Val Pro Arg Asn Ala Gln Phe Lys Pro His Thr Asp Glu Asp Leu | 260 | 265 | 270 |
| Val Tyr Leu Glu Pro Ser Pro Asp Phe Cys Glu Gln Asp Met Arg | 275 | 280 | 285 |
| Ser Gly Val Leu Gly Thr Arg Gly Arg Thr Cys Asn Lys Thr Ser | 290 | 295 | 300 |
| Lys Ala Ile Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly Phe | 305 | 310 | 315 |
| His Thr Ala Gln Val Glu Leu Ala Glu Arg Cys Ser Cys Lys Phe | 320 | 325 | 330 |
| His Trp Cys Cys Phe Val Lys Cys Arg Gln Cys Gln Arg Leu Val | 335 | 340 | 345 |
| Glu Leu His Thr Cys Arg | 350 | | |

<210> 227
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 227
 gctgcagctg caaattccac tgg 23

<210> 228
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 228
 tgggtggaga ctgtttaa at tatcgcc 28

<210> 229
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 229

tgcttcgtca agtgccggca gtgccagcgg ctctgtggagt t 41

<210> 230

<211> 1355

<212> DNA

<213> Homo sapiens

<400> 230

cggacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggct 50
gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
gctccgagga ggtccccgga gggccctggg gacgctgggt gcaactggagc 150
aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcgg 250
cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400
cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
cgcgtgaccc agggcttggc tgaagccggc aggggccgtg aggacgtccg 500
caactgagctg ttccgggcgc tggaggccgt gaggctccag aacaactcct 550
gcgagccgtg cccacgctg tggctgtcct tcgagggctc ctgctacttt 600
ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650
tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggttcc 700
tcaactcgaa cagcgtggc cgtggttact ggctgggcct gagggtgtg 750
cgccatctgg gcaaggttca gggctaccag tgggtggacg gactctctct 800
cagcttcagc cactggaacc agggagagcc caatgacgtc tgggggcgcg 850
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg taccctgggg 1000
gctgctcacc tccctggctc ctggagctga ttgccaaaga gtttttttct 1050
tcctcatcca ccgctgctga gtctcagaaa caattggccc aacatagccc 1100
tgtccagccc agtgccctggg ctctggggacc tccatgccga cctcatccta 1150

actccactca cgcagaccca acctaacctc cactagctcc aaaatccctg 1200
 ctctgcgctc cccgtgatat gcctccactt ctctccctaa ccaagggttag 1250
 gtgactgagg actggagctg tttgggttttc tcgcattttc caccaaactg 1300
 gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350
 aaaaa 1355

<210> 231

<211> 293

<212> PRT

<213> Homo sapiens

<400> 231

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Thr | Thr | Arg | Tyr | Ser | Lys | Trp | Gly | Gly | Ser | Ser | Glu | Glu | 1 | 5 | 10 | 15 |
| Val | Pro | Gly | Gly | Pro | Trp | Gly | Arg | Trp | Val | His | Trp | Ser | Arg | Arg | 20 | 25 | 30 | |
| Pro | Leu | Phe | Leu | Ala | Leu | Ala | Val | Leu | Val | Thr | Thr | Val | Leu | Trp | 35 | 40 | 45 | |
| Ala | Val | Ile | Leu | Ser | Ile | Leu | Leu | Ser | Lys | Ala | Ser | Thr | Glu | Arg | 50 | 55 | 60 | |
| Ala | Ala | Leu | Leu | Asp | Gly | His | Asp | Leu | Leu | Arg | Thr | Asn | Ala | Ser | 65 | 70 | 75 | |
| Lys | Gln | Thr | Ala | Ala | Leu | Gly | Ala | Leu | Lys | Glu | Glu | Val | Gly | Asp | 80 | 85 | 90 | |
| Cys | His | Ser | Cys | Cys | Ser | Gly | Thr | Gln | Ala | Gln | Leu | Gln | Thr | Thr | 95 | 100 | 105 | |
| Arg | Ala | Glu | Leu | Gly | Glu | Ala | Gln | Ala | Lys | Leu | Met | Glu | Gln | Glu | 110 | 115 | 120 | |
| Ser | Ala | Leu | Arg | Glu | Leu | Arg | Glu | Arg | Val | Thr | Gln | Gly | Leu | Ala | 125 | 130 | 135 | |
| Glu | Ala | Gly | Arg | Gly | Arg | Glu | Asp | Val | Arg | Thr | Glu | Leu | Phe | Arg | 140 | 145 | 150 | |
| Ala | Leu | Glu | Ala | Val | Arg | Leu | Gln | Asn | Asn | Ser | Cys | Glu | Pro | Cys | 155 | 160 | 165 | |
| Pro | Thr | Ser | Trp | Leu | Ser | Phe | Glu | Gly | Ser | Cys | Tyr | Phe | Phe | Ser | 170 | 175 | 180 | |
| Val | Pro | Lys | Thr | Thr | Trp | Ala | Ala | Ala | Gln | Asp | His | Cys | Ala | Asp | 185 | 190 | 195 | |
| Ala | Ser | Ala | His | Leu | Val | Ile | Val | Gly | Gly | Leu | Asp | Glu | Gln | Gly | 200 | 205 | 210 | |

Phe Leu Thr Arg Asn Thr Arg Gly Arg Gly Tyr Trp Leu Gly Leu
215 220 225

Arg Ala Val Arg His Leu Gly Lys Val Gln Gly Tyr Gln Trp Val
230 235 240

Asp Gly Val Ser Leu Ser Phe Ser His Trp Asn Gln Gly Glu Pro
245 250 255

Asn Asp Ala Trp Gly Arg Glu Asn Cys Val Met Met Leu His Thr
260 265 270

Gly Leu Trp Asn Asp Ala Pro Cys Asp Ser Glu Lys Asp Gly Trp
275 280 285

Ile Cys Glu Lys Arg His Asn Cys
290

<210> 232

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 232

gcgagaactg tgtcatgatg ctgc 24

<210> 233

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 233

gtttctgaga ctcagcagcg gtgg 24

<210> 234

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235

<211> 1847

<212> DNA

<213> Homo sapiens

<400> 235

gccaggggaa gaggtgatc cgacccgggg aaggtcgctg ggcagggcga 50
gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctctctcttt 100
ctccacgctc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150
agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200
gcttaaatag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250
cgctcccgtc gctcctgccg ggtgatggaa aacccagcc cggccgccc 300
cctgggcaag gccctctgcg ctctctctct ggccactctc ggcgcccgcg 350
gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400
tacagcatca ccttcacggg caagtggagc cagacggcct tccccaagca 450
gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctggggggccg 500
cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550
gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600
gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
cgcccgcgt cccagcggc accgggcaga cgtcggcgga gctggaggtg 700
cagcgcaggc actcgctggt ctcgtttggt gtgcgcatcg tgcccagccc 750
cgactggttc gtgggcgtgg acagcctgga cctgtgcgac ggggaccgtt 800
ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850
agcggcttca ccttctctc ccccaacttc gccaccatcc cgcaggacac 900
ggtgaccgag ataacgtcct cctctcccag ccacccggcc aactccttct 950
actaccgcg gctgaaggcc ctgcctcca tcgccagggt gacactgctg 1000
cggctgcgac agagccccag ggccttcac cctcccgccc cagtccctgcc 1050
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tggaactcga ggtctccctg tggctcgtcct ggggactgtg cggaggccac 1150
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cggagccatg ggggtgcggg ggctcctgtg caggctcatg ctgcaggcgg 1350
ccgagggcac aggggggttc gcgctgctcc tgaccgcggt gaggccgcgc 1400

cgaccatctc tgcaactgaag ggcctctgg tggccggcac gggcattggg 1450
 aaacagcctc ctcctttccc aaccttgctt cttaggggcc cccgtgtccc 1500
 gtctgtcttc agcctcctcc tctgcagga taaagtcac cccaaggctc 1550
 cagctactct aaattatgtc tccttataag ttattgtgc tccaggagat 1600
 tgtccttcat cgtccagggg cctggctccc acgtggtgc agatacctca 1650
 gacctggtgc tctaggctgt gctgagccca ctctcccgag ggcgcatcca 1700
 agcggggggc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750
 gtgtttccat gttatggatc tctctgcgtt tgaataaaga ctatctctgt 1800
 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 236
 Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys
 1 5 10 15
 Ala Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly
 20 25 30
 Gly Glu Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile
 35 40 45
 Thr Phe Thr Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr
 50 55 60
 Pro Leu Phe Arg Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala
 65 70 75
 Ala His Ser Ser Asp Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val
 80 85 90
 Ser Asn Gly Leu Arg Asp Phe Ala Glu Arg Gly Glu Ala Trp Ala
 95 100 105
 Leu Met Lys Glu Ile Glu Ala Ala Gly Glu Ala Leu Gln Ser Val
 110 115 120
 His Glu Val Phe Ser Ala Pro Ala Val Pro Ser Gly Thr Gly Gln
 125 130 135
 Thr Ser Ala Glu Leu Glu Val Gln Arg Arg His Ser Leu Val Ser
 140 145 150
 Phe Val Val Arg Ile Val Pro Ser Pro Asp Trp Phe Val Gly Val
 155 160 165

| | | |
|---------------------|---|-------------------------|
| Asp Ser Leu Asp | Leu Cys Asp Gly Asp | Arg Trp Arg Glu Gln Ala |
| 170 | 175 | 180 |
| Ala Leu Asp Leu Tyr | Pro Tyr Asp Ala Gly Thr Asp Ser Gly Phe | |
| 185 | 190 | 195 |
| Thr Phe Ser Ser | Pro Asn Phe Ala Thr Ile Pro Gln Asp Thr Val | |
| 200 | 205 | 210 |
| Thr Glu Ile Thr Ser | Ser Ser Pro Ser His Pro Ala Asn Ser Phe | |
| 215 | 220 | 225 |
| Tyr Tyr Pro Arg Leu | Lys Ala Leu Pro Pro Ile Ala Arg Val Thr | |
| 230 | 235 | 240 |
| Leu Leu Arg Leu Arg | Gln Ser Pro Arg Ala Phe Ile Pro Pro Ala | |
| 245 | 250 | 255 |
| Pro Val Leu Pro Ser | Arg Asp Asn Glu Ile Val Asp Ser Ala Ser | |
| 260 | 265 | 270 |
| Val Pro Glu Thr Pro | Leu Asp Cys Glu Val Ser Leu Trp Ser Ser | |
| 275 | 280 | 285 |
| Trp Gly Leu Cys Gly | Gly His Cys Gly Arg Leu Gly Thr Lys Ser | |
| 290 | 295 | 300 |
| Arg Thr Arg Tyr Val | Arg Val Gln Pro Ala Asn Asn Gly Ser Pro | |
| 305 | 310 | 315 |
| Cys Pro Glu Leu Glu | Glu Glu Ala Glu Cys Val Pro Asp Asn Cys | |
| 320 | 325 | 330 |

Val

<210> 237

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237

cagcactgcc aggggaagag gg 22

<210> 238

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 238

caggactcgc tacgtccg 18

<210> 239
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 239
cagccccttc tctcctttc tccc 24

<210> 240
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 240
gcagttatca gggacgcact cagcc 25

<210> 241
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 241
ccagcgagag gcagatag 18

<210> 242
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 242
cggtcaccgt gtctgcggg atg 23

<210> 243
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 243
cagccccttc tctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894
<212> DNA
<213> Homo sapiens

<400> 244
ggcggcgctcc gtgaggggct cctttgggca ggggtagtgt ttggtgtccc 50
tgtcttgctg gatattgaca aactgaagct ttctgcacc actggactta 100
aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200
tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250
gctggagata ttgacataga gttgtgggtcc aaagaagctc cttaaagcttg 300
cagaaatfff atccaactff gtttgggaag ttattatgac aataccatff 350
ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450
tcattcacgg ttgcgtttta atcggagagg actggttgcc atggcaaatg 500
ctggtttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550
gatgaactta acaataagca taccatcttt ggaaaggta caggggatac 600
agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650
gaccacataa tccacacaaa ataaaaagct gtgaggtttt gtttaatcct 700
tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750
agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aatttttagtt 800
tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850
gttagtcaga gcatgaaggg caaaagcaaa agtagtcatg acttgcttaa 900
ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaagggtg 950
atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000
gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050
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aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150
agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200
tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gccctccag 1250
atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300

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 ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450
 tcacatgtac ttcagtttga ggataaaagc agaaaagtga aagatgcaag 1500
 catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550
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 agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650
 acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700
 gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750
 tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800
 catgtgtttt ttctagctg accttttata ttgctaaatc tgaaataaaa 1850
 taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245
 <211> 472
 <212> PRT
 <213> Homo sapiens

<400> 245
 Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val
 1 5 10 15
 Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser
 20 25 30
 Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu
 35 40 45
 Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly
 50 55 60
 Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly
 65 70 75
 Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg
 80 85 90
 Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly
 95 100 105
 Ser His Asp Asn Gly Ser Gln Phe Phe Phe Thr Leu Gly Arg Ala
 110 115 120
 Asp Glu Leu Asn Asn Lys His Thr Ile Phe Gly Lys Val Thr Gly
 125 130 135

| | | | | |
|-----------------|---|-----|-----|-----|
| Asp Thr Val Tyr | Asn Met Leu Arg Leu Ser Glu Val Asp Ile Asp | 140 | 145 | 150 |
| Asp Asp Glu Arg | Pro His Asn Pro His Lys Ile Lys Ser Cys Glu | 155 | 160 | 165 |
| Val Leu Phe Asn | Pro Phe Asp Asp Ile Ile Pro Arg Glu Ile Lys | 170 | 175 | 180 |
| Arg Leu Lys Lys | Glu Lys Pro Glu Glu Glu Val Lys Lys Leu Lys | 185 | 190 | 195 |
| Pro Lys Gly Thr | Lys Asn Phe Ser Leu Leu Ser Phe Gly Glu Glu | 200 | 205 | 210 |
| Ala Glu Glu Glu | Glu Glu Glu Val Asn Arg Val Ser Gln Ser Met | 215 | 220 | 225 |
| Lys Gly Lys Ser | Lys Ser Ser His Asp Leu Leu Lys Asp Asp Pro | 230 | 235 | 240 |
| His Leu Ser Ser | Val Pro Val Val Glu Ser Glu Lys Gly Asp Ala | 245 | 250 | 255 |
| Pro Asp Leu Val | Asp Asp Gly Glu Asp Glu Ser Ala Glu His Asp | 260 | 265 | 270 |
| Glu Tyr Ile Asp | Gly Asp Glu Lys Asn Leu Met Arg Glu Arg Ile | 275 | 280 | 285 |
| Ala Lys Lys Leu | Lys Lys Asp Thr Ser Ala Asn Val Lys Ser Ala | 290 | 295 | 300 |
| Gly Glu Gly Glu | Val Glu Lys Lys Ser Val Ser Arg Ser Glu Glu | 305 | 310 | 315 |
| Leu Arg Lys Glu | Ala Arg Gln Leu Lys Arg Glu Leu Leu Ala Ala | 320 | 325 | 330 |
| Lys Gln Lys Lys | Val Glu Asn Ala Ala Lys Gln Ala Glu Lys Arg | 335 | 340 | 345 |
| Ser Glu Glu Glu | Glu Ala Pro Pro Asp Gly Ala Val Ala Glu Tyr | 350 | 355 | 360 |
| Arg Arg Glu Lys | Gln Lys Tyr Glu Ala Leu Arg Lys Gln Gln Ser | 365 | 370 | 375 |
| Lys Lys Gly Thr | Ser Arg Glu Asp Gln Thr Leu Ala Leu Leu Asn | 380 | 385 | 390 |
| Gln Phe Lys Ser | Lys Leu Thr Gln Ala Ile Ala Glu Thr Pro Glu | 395 | 400 | 405 |
| Asn Asp Ile Pro | Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met | 410 | 415 | 420 |

Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp
425 430 435

Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg
440 445 450

Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met
455 460 465

Arg Glu Lys Lys Glu Arg Arg
470

<210> 246

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 246

tgcgagatc ctactggcac aggg 24

<210> 247

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 247

cgagttagtc agagcatg 18

<210> 248

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 248

cagatggtgc tggtgccg 18

<210> 249

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 249

caactggaac aggaactgag atgtggatc 29

<210> 250

<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 250
ctggttcagc agtgcaaggg tctg 24

<210> 251
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 251
cctctccgat taaaacgc 18

<210> 252
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 252
gagaggactg gttgccatgg caaatgctgg ttctcatgat aatgg 45

<210> 253
<211> 2456
<212> DNA
<213> Homo sapiens

<400> 253
cgccgcccgtt ggggctggaa gttcccgcga ggtccgtgcc gggcgagaga 50
gatgctgccc ggccgcctc ggctttgagg cgagagaagt gtcccagacc 100
catttcgcct tgctgacggc gtogagccct ggccagacat gtccacaggg 150
ttctccttcg ggtccgggac tctgggctcc accaccgtgg ccgccggcgg 200
gaccagcaca ggcggcgttt tctccttcgg aacgggaacg tctagcaacc 250
cttctgtggg gctcaatttt ggaaatcttg gaagtacttc aactccagca 300
actacatctg ctccctcaag tggttttgga accgggctct ttggatctaa 350
acctgccact gggttcactc taggaggaac aaatacaggt gccttgca 400
ccaagaggcc tcaagtggc accaaatatg gaaccctgca aggaaaacag 450
atgcatgtgg ggaagacacc catccaagtc tttttaggag tccccttctc 500

cagacctcct ctaggtatcc tcaggtttgc acctccagaa cccccggagc 550
cctggaaagg aatcagagat gctaccacct accgcctgg atggagtctc 600
gctctgtcgc caggctggag tgcagtggca cgatctcggc tcaactgcaac 650
ctccgcctcc cgggttcaag cgagtctcct gcctcagcct ctgagtgtct 700
ggggctacag gtgcctgcag gagtccctggg gccagctggc ctgatgtac 750
gtcagcacgc gggaacggta caagtggctg cgcttcagcg aggactgtct 800
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cagtgatggt ctggttcccc ggaggcgctt tcctcgtggg cgctgcttct 900
tcgtacgagg gctctgactt ggccgcccgc gagaaagtgg tgctggtgtt 950
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gttcggccag tcggcggggg ccatgagcat ctcaggactg atgatgtcac 1150
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ttattcagac ttttcatcac tagtaaccca ctgaaagtgg ccaagaaggt 1250
tgcccacctg gctggatgca accacaacag cacacagatc ctggtaaact 1300
gcctgagggc actatcaggg accaaggtga tgcgtgtgtc caacaagatg 1350
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catgagccct gtggtggatg gtgtggtgat ccagatgac cctttgggtg 1450
tcctgacca ggggaagggt tcctctgtgc cctaccttct aggtgtcaac 1500
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agatgctacg aaaccgtatg atggacatag ttcaagatgc cactttcgtg 1650
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aatctgccct gctggccacg ctacaacaag gatgaaaagt acctgcagct 1750
ggattttacc acaagagtgg gcatgaagct caaggagaag aagatggctt 1800
tttgatgag tctgtaccag tctcaaagac ctgagaagca gaggcaattc 1850
taaggggtggc tatgcaggaa ggagccaaag aggggtttgc cccaccatc 1900

caggccctgg ggagactagc catggacata cctggggaca agagttctac 1950
 ccaccccagt ttagaactgc aggagctccc tgctgcctcc aggccaaagc 2000
 tagagctttt gcctgttgtg tgggacctgc actgcccttt ccagcctgac 2050
 atcccatgat gcccctctac ttcactgttg acatccagtt aggccaggcc 2100
 ctgtcaacac cacactgtgc tcagctctcc agcctcagga caacctcttt 2150
 ttttcccttc ttcaaactcct cccacccttc aatgtctcct tgtgactcct 2200
 tcttatggga ggtcgacca gactgccact gcccctgtca ctgcaccag 2250
 cttggcattt accatccatc ctgctcaacc ttgttctgt ctgttcacat 2300
 tggcctggag gcctagggca ggttgtgaca tggagcaaac ttttggtagt 2350
 ttgggatctt ctctcccacc cacacttata tccccaggg ccaactccaaa 2400
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 aaaaaa 2456

<210> 254

<211> 545

<212> PRT

<213> Homo sapiens

<400> 254

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Thr | Gly | Phe | Ser | Phe | Gly | Ser | Gly | Thr | Leu | Gly | Ser | Thr | 1 | 5 | 10 | 15 |
| Thr | Val | Ala | Ala | Gly | Gly | Thr | Ser | Thr | Gly | Gly | Val | Phe | Ser | Phe | 20 | 25 | 30 | |
| Gly | Thr | Gly | Thr | Ser | Ser | Asn | Pro | Ser | Val | Gly | Leu | Asn | Phe | Gly | 35 | 40 | 45 | |
| Asn | Leu | Gly | Ser | Thr | Ser | Thr | Pro | Ala | Thr | Thr | Ser | Ala | Pro | Ser | 50 | 55 | 60 | |
| Ser | Gly | Phe | Gly | Thr | Gly | Leu | Phe | Gly | Ser | Lys | Pro | Ala | Thr | Gly | 65 | 70 | 75 | |
| Phe | Thr | Leu | Gly | Gly | Thr | Asn | Thr | Gly | Ala | Leu | His | Thr | Lys | Arg | 80 | 85 | 90 | |
| Pro | Gln | Val | Val | Thr | Lys | Tyr | Gly | Thr | Leu | Gln | Gly | Lys | Gln | Met | 95 | 100 | 105 | |
| His | Val | Gly | Lys | Thr | Pro | Ile | Gln | Val | Phe | Leu | Gly | Val | Pro | Phe | 110 | 115 | 120 | |
| Ser | Arg | Pro | Pro | Leu | Gly | Ile | Leu | Arg | Phe | Ala | Pro | Pro | Glu | Pro | 125 | 130 | 135 | |

| | | | |
|---|-----|-----|-----|
| Pro Glu Pro Trp Lys Gly Ile Arg Asp Ala Thr Thr Tyr Pro Pro | 140 | 145 | 150 |
| Gly Trp Ser Leu Ala Leu Ser Pro Gly Trp Ser Ala Val Ala Arg | 155 | 160 | 165 |
| Ser Arg Leu Thr Ala Thr Ser Ala Ser Arg Val Gln Ala Ser Leu | 170 | 175 | 180 |
| Leu Pro Gln Pro Leu Ser Val Trp Gly Tyr Arg Cys Leu Gln Glu | 185 | 190 | 195 |
| Ser Trp Gly Gln Leu Ala Ser Met Tyr Val Ser Thr Arg Glu Arg | 200 | 205 | 210 |
| Tyr Lys Trp Leu Arg Phe Ser Glu Asp Cys Leu Tyr Leu Asn Val | 215 | 220 | 225 |
| Tyr Ala Pro Ala Arg Ala Pro Gly Asp Pro Gln Leu Pro Val Met | 230 | 235 | 240 |
| Val Trp Phe Pro Gly Gly Ala Phe Ile Val Gly Ala Ala Ser Ser | 245 | 250 | 255 |
| Tyr Glu Gly Ser Asp Leu Ala Ala Arg Glu Lys Val Val Leu Val | 260 | 265 | 270 |
| Phe Leu Gln His Arg Leu Gly Ile Phe Gly Phe Leu Ser Thr Asp | 275 | 280 | 285 |
| Asp Ser His Ala Arg Gly Asn Trp Gly Leu Leu Asp Gln Met Ala | 290 | 295 | 300 |
| Ala Leu Arg Trp Val Gln Glu Asn Ile Ala Ala Phe Gly Gly Asp | 305 | 310 | 315 |
| Pro Gly Asn Val Thr Leu Phe Gly Gln Ser Ala Gly Ala Met Ser | 320 | 325 | 330 |
| Ile Ser Gly Leu Met Met Ser Pro Leu Ala Ser Gly Leu Phe His | 335 | 340 | 345 |
| Arg Ala Ile Ser Gln Ser Gly Thr Ala Leu Phe Arg Leu Phe Ile | 350 | 355 | 360 |
| Thr Ser Asn Pro Leu Lys Val Ala Lys Lys Val Ala His Leu Ala | 365 | 370 | 375 |
| Gly Cys Asn His Asn Ser Thr Gln Ile Leu Val Asn Cys Leu Arg | 380 | 385 | 390 |
| Ala Leu Ser Gly Thr Lys Val Met Arg Val Ser Asn Lys Met Arg | 395 | 400 | 405 |
| Phe Leu Gln Leu Asn Phe Gln Arg Asp Pro Glu Glu Ile Ile Trp | 410 | 415 | 420 |

| | | | |
|---|-----|-----|-----|
| Ser Met Ser Pro Val Val Asp Gly Val Val Ile Pro Asp Asp Pro | 425 | 430 | 435 |
| Leu Val Leu Leu Thr Gln Gly Lys Val Ser Ser Val Pro Tyr Leu | 440 | 445 | 450 |
| Leu Gly Val Asn Asn Leu Glu Phe Asn Trp Leu Leu Pro Tyr Asn | 455 | 460 | 465 |
| Ile Thr Lys Glu Gln Val Pro Leu Val Val Glu Glu Tyr Leu Asp | 470 | 475 | 480 |
| Asn Val Asn Glu His Asp Trp Lys Met Leu Arg Asn Arg Met Met | 485 | 490 | 495 |
| Asp Ile Val Gln Asp Ala Thr Phe Val Tyr Ala Thr Leu Gln Thr | 500 | 505 | 510 |
| Ala His Tyr His Arg Glu Thr Pro Met Met Gly Ile Cys Pro Ala | 515 | 520 | 525 |
| Gly His Ala Thr Thr Arg Met Lys Ser Thr Cys Ser Trp Ile Leu | 530 | 535 | 540 |
| Pro Gln Glu Trp Ala | 545 | | |

<210> 255
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 255
 aggtgcctgc aggagtcctg ggg 23

<210> 256
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 256
 ccacctcagg aagccgaaga tgcc 24

<210> 257
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 257

gaacggtaca agtggctgcg cttcagcgag gactgtctgt acctg 45

<210> 258

<211> 2764

<212> DNA

<213> Homo sapiens

<400> 258

gagaacaggc ctgtctcagg caggccctgc gcctcctatg cggagatgct 50

actgccactg ctgctgtcct cgctgctggg cgggtcccag gctatggatg 100

ggagattctg gatacgagtg caggagtcag tgatggtgcc ggagggcctg 150

tgcattcttg tgccctgctc tttctcctac ccccgacaag actggacagg 200

gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250

aggggtgctcc tgtggccaca aaccaccaga gtcgagaggt ggaaatgagc 300

acccggggcc gattccagct cactggggat cccgccaagg ggaactgctc 350

cttgggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400

gggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450

tttctaaaag taacagtgtc cagcttcacg cccagacccc aggaccacaa 500

caccgacctc acctgccatg tggacttctc cagaaagggt gtgagcgcac 550

agaggaccgt ccgactccgt gtggcctatg ccccagaga cttgtttatc 600

agcatttcac gtgacaacac gccagccctg gagccccagc cccagggaaa 650

tgtcccatac ctggaagccc aaaaaggcca gttcctgcgg ctctctctgtg 700

ctgctgacag ccagccccct gccacactga gctgggtcct gcagaacaga 750

gtcctctcct cgtcccatcc ctggggccct agaccctgg ggctggagct 800

gcccgggggtg aaggctgggg attcagggcg ctacacctgc cgagcggaga 850

acaggcttgg ctcccagcag cgagccctgg acctctctgt gcagtatcct 900

ccagagaacc tgagagtgat ggtttcccaa gcaaacagga cagtcttgga 950

aaaccttggg aacggcacgt ctctcccagt actggagggc caaagcctgt 1000

gcctggtctg tgtcacacac agcagcccc cagccaggct gagctggacc 1050

cagaggggac aggttctgag cccctcccag ccctcagacc ccggggctct 1100

ggagctgcct cgggttcaag tggagcacga aggagagttc acctgccacg 1150

ctcggcacc actgggtccc cagcacgtct ctctcagcct ctccgtgcac 1200

tataagaagg gactcatctc aacggcattc tccaacggag cgtttctggg 1250
aatcggcatc acggctcttc ttttcctctg cctggccctg atcatcatga 1300
agattctacc gaagagacgg actcagacag aaaccccgag gccaggttc 1350
tcccggcaca gcacgacct ggattacatc aatgtggtcc cgacggctgg 1400
ccccctggct cagaagcggg atcagaaaagc cacaccaaagc agtcctcgga 1450
cccctcctcc accaggtgct cctccccag aatcaaagaa gaaccagaaa 1500
aagcagtatc agttgccag tttcccagaa cccaaatcat cactcaagc 1550
cccagaatcc caggagagcc aagaggagct ccattatgcc acgctcaact 1600
tcccaggcgt cagaccagc cctgaggccc ggatgccaa gggcaccag 1650
gcggtattatg cagaagtcaa gttccaatga gggctcttta ggcttagga 1700
ctgggacttc ggctagggag gaaggtagag taagaggttg aagataacag 1750
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ctcttctct ctcttttaa aaaacatctg gccagggcac agtggctcac 1850
gcctgtaatc ccagcacttt gggaggttga ggtgggcaga tcgcctgagg 1900
tcgggagttc gagaccagcc tggccaactt ggtgaaaccc cgtctctact 1950
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tacttgggaa gctgaggcag gagaatcact tgaacctggg agacggaggt 2050
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cccagcactt tgggaggcta aggtgggtg attgcttgag cccaggagtt 2200
cgagaccagc ctgggcaaca tgggtgaaacc ccattctctac aaaaaataca 2250
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tttaaaccag agcaactcca tctggaatag gagctgaata aatgagggt 2350
gagacctact gggctgcatt ctgagacagt ggaggcattc taagtcacag 2400
gatgagacag gaggtccgta caagatacag gtcataaaga ctttgctgat 2450
aaaacagatt gcagtaaaga agccaaccaa atcccaccaa aaccaagttg 2500
gccagagag tgacctctgg tcgtctcac tgctacactc ctgacagcac 2550
catgacagtt taaaatgcc atggcaacat caggaagtta ccgatatgt 2600
cccaaaaggg ggaggaatga ataatccacc cttgttttag caaataagca 2650

agaaataacc ataaaagtgg gcaaccagca gctctaggcg ctgctcttgt 2700
 ctatggagta gccattcttt tgttccttta ctttcttaat aaacttgctt 2750
 tcaccttaaa aaaa 2764

<210> 259
 <211> 544
 <212> PRT
 <213> Homo sapiens

<400> 259

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Leu | Pro | Leu | Leu | Leu | Ser | Ser | Leu | Leu | Gly | Gly | Ser | Gln | 1 | 5 | 10 | 15 |
| Ala | Met | Asp | Gly | Arg | Phe | Trp | Ile | Arg | Val | Gln | Glu | Ser | Val | Met | 20 | 25 | 30 | |
| Val | Pro | Glu | Gly | Leu | Cys | Ile | Ser | Val | Pro | Cys | Ser | Phe | Ser | Tyr | 35 | 40 | 45 | |
| Pro | Arg | Gln | Asp | Trp | Thr | Gly | Ser | Thr | Pro | Ala | Tyr | Gly | Tyr | Trp | 50 | 55 | 60 | |
| Phe | Lys | Ala | Val | Thr | Glu | Thr | Thr | Lys | Gly | Ala | Pro | Val | Ala | Thr | 65 | 70 | 75 | |
| Asn | His | Gln | Ser | Arg | Glu | Val | Glu | Met | Ser | Thr | Arg | Gly | Arg | Phe | 80 | 85 | 90 | |
| Gln | Leu | Thr | Gly | Asp | Pro | Ala | Lys | Gly | Asn | Cys | Ser | Leu | Val | Ile | 95 | 100 | 105 | |
| Arg | Asp | Ala | Gln | Met | Gln | Asp | Glu | Ser | Gln | Tyr | Phe | Phe | Arg | Val | 110 | 115 | 120 | |
| Glu | Arg | Gly | Ser | Tyr | Val | Thr | Tyr | Asn | Phe | Met | Asn | Asp | Gly | Phe | 125 | 130 | 135 | |
| Phe | Leu | Lys | Val | Thr | Val | Leu | Ser | Phe | Thr | Pro | Arg | Pro | Gln | Asp | 140 | 145 | 150 | |
| His | Asn | Thr | Asp | Leu | Thr | Cys | His | Val | Asp | Phe | Ser | Arg | Lys | Gly | 155 | 160 | 165 | |
| Val | Ser | Ala | Gln | Arg | Thr | Val | Arg | Leu | Arg | Val | Ala | Tyr | Ala | Pro | 170 | 175 | 180 | |
| Arg | Asp | Leu | Val | Ile | Ser | Ile | Ser | Arg | Asp | Asn | Thr | Pro | Ala | Leu | 185 | 190 | 195 | |
| Glu | Pro | Gln | Pro | Gln | Gly | Asn | Val | Pro | Tyr | Leu | Glu | Ala | Gln | Lys | 200 | 205 | 210 | |
| Gly | Gln | Phe | Leu | Arg | Leu | Leu | Cys | Ala | Ala | Asp | Ser | Gln | Pro | Pro | 215 | 220 | 225 | |

| | | | |
|---|-----|-----|-----|
| Ala Thr Leu Ser Trp Val Leu Gln Asn Arg Val Leu Ser Ser Ser | 230 | 235 | 240 |
| His Pro Trp Gly Pro Arg Pro Leu Gly Leu Glu Leu Pro Gly Val | 245 | 250 | 255 |
| Lys Ala Gly Asp Ser Gly Arg Tyr Thr Cys Arg Ala Glu Asn Arg | 260 | 265 | 270 |
| Leu Gly Ser Gln Gln Arg Ala Leu Asp Leu Ser Val Gln Tyr Pro | 275 | 280 | 285 |
| Pro Glu Asn Leu Arg Val Met Val Ser Gln Ala Asn Arg Thr Val | 290 | 295 | 300 |
| Leu Glu Asn Leu Gly Asn Gly Thr Ser Leu Pro Val Leu Glu Gly | 305 | 310 | 315 |
| Gln Ser Leu Cys Leu Val Cys Val Thr His Ser Ser Pro Pro Ala | 320 | 325 | 330 |
| Arg Leu Ser Trp Thr Gln Arg Gly Gln Val Leu Ser Pro Ser Gln | 335 | 340 | 345 |
| Pro Ser Asp Pro Gly Val Leu Glu Leu Pro Arg Val Gln Val Glu | 350 | 355 | 360 |
| His Glu Gly Glu Phe Thr Cys His Ala Arg His Pro Leu Gly Ser | 365 | 370 | 375 |
| Gln His Val Ser Leu Ser Leu Ser Val His Tyr Lys Lys Gly Leu | 380 | 385 | 390 |
| Ile Ser Thr Ala Phe Ser Asn Gly Ala Phe Leu Gly Ile Gly Ile | 395 | 400 | 405 |
| Thr Ala Leu Leu Phe Leu Cys Leu Ala Leu Ile Ile Met Lys Ile | 410 | 415 | 420 |
| Leu Pro Lys Arg Arg Thr Gln Thr Glu Thr Pro Arg Pro Arg Phe | 425 | 430 | 435 |
| Ser Arg His Ser Thr Ile Leu Asp Tyr Ile Asn Val Val Pro Thr | 440 | 445 | 450 |
| Ala Gly Pro Leu Ala Gln Lys Arg Asn Gln Lys Ala Thr Pro Asn | 455 | 460 | 465 |
| Ser Pro Arg Thr Pro Pro Pro Pro Gly Ala Pro Ser Pro Glu Ser | 470 | 475 | 480 |
| Lys Lys Asn Gln Lys Lys Gln Tyr Gln Leu Pro Ser Phe Pro Glu | 485 | 490 | 495 |
| Pro Lys Ser Ser Thr Gln Ala Pro Glu Ser Gln Glu Ser Gln Glu | 500 | 505 | 510 |

Glu Leu His Tyr Ala Thr Leu Asn Phe Pro Gly Val Arg Pro Arg
515 520 525

Pro Glu Ala Arg Met Pro Lys Gly Thr Gln Ala Asp Tyr Ala Glu
530 535 540

Val Lys Phe Gln

<210> 260

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 260

caaagcctgc gcctggtctg tg 22

<210> 261

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 261

ttctggagcc cagaggggtgc tgag 24

<210> 262

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 262

ggagctgcca cccattcaaa tggagcacga aggagagttc acctg 45

<210> 263

<211> 2857

<212> DNA

<213> Homo sapiens

<400> 263

tgaagagtaa tagttggaat caaaagagtc aacgcaatga actgttattt 50

actgctgcgt tttatgttgg gaattcctct cctatggcct tgtcttggag 100

caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150

ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200

aatgaatagc actagtcac acatcgcca gctaagatct gatttagaca 250
atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300
acttttatca ttgatgaaag aacaggtgac atatatgcca tacagaagct 350
tgatagagag gagcgatccc tctacatctt aagagcccag gtaatagaca 400
tcgctactgg aagggctgtg gaacctgagt ctgagtttgt catcaaagtt 450
tcggatatca atgacaatga accaaaattc ctagatgaac cttatgaggc 500
cattgtacca gagatgtctc cagaaggaac attagttatc caggtgacag 550
caagtgatgc tgacgatccc tcaagtggta ataatgctcg tctcctctac 600
agcttacttc aaggccagcc atatTTTTt gttgaaccaa caacaggagt 650
cataagaata tcttctaaaa tggatagaga actgcaagat gagtattggg 700
taatcattca agccaaggac atgattggtc agccaggagc gttgtctgga 750
acaacaagtg tattaattaa actttcagat gttaatgaca ataagcctat 800
atttaaagaa agtttatacc gcttgactgt ctctgaatct gcacccactg 850
ggacttctat aggaacaatc atggcatatg ataatgacat aggagagaat 900
gcagaaatgg attacagcat tgaagaggat gattcgcaaa catttgacat 950
tattactaat catgaaactc aagaaggaat agttatatta aaaaagaaag 1000
tggattttga gcaccagaac cactacggta ttagagcaaa agttaaaaac 1050
catcatgttc ctgagcagct catgaagtac cacactgagg cttccaccac 1100
tttcattaag atccaggtgg aagatgttga tgagcctcct cttttcctcc 1150
ttccatatta tgtatttgaa gtttttgaag aaaccccaca gggatcattt 1200
gtaggcgtgg tgtctgccac agaccagac aataggaaat ctctatcag 1250
gtattctatt actaggagca aagtgttcaa tatcaatgat aatggtacaa 1300
tcactacaag taactcactg gatcgtgaaa tcagtgcttg gtacaaccta 1350
agtattacag ccacagaaaa atacaatata gaacagatct cttcgatccc 1400
actgtatgtg caagttctta acatcaatga tcatgctcct gagttctctc 1450
aatactatga gacttatgtt tgtgaaaatg caggctctgg tcaggtaatt 1500
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ttactttaat ctatctgtag aagacactaa caattcaagt ttacaatca 1600
tagataatca agataacaca gctgtcattt tgactaatag aactggtttt 1650

aaccttcaag aagaacctgt cttctacatc tccatcttaa ttgccgacaa 1700
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 aatgtaggaa gatattaaaa gtagatgaga ggacacaaga tgtagtcgat 2650
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 cgagaaaatt taaaggagca aaaatttgca agtcaaataa aaatgtacaa 2750
 atcgagataa catttacatt tctatcatat tgacatgaaa attgaaaatg 2800
 tatagtcaga gaaattttca tgaattattc catgaagtat tgtttccttt 2850
 atttaaa 2857

<210> 264

<211> 772

<212> PRT

<213> Homo sapiens

<400> 264

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|----|-----|
| Met | Asn | Cys | Tyr | Leu | Leu | Leu | Arg | Phe | Met | Leu | Gly | Ile | Pro | Leu | | 1 | 5 | 10 | 15 |
| Leu | Trp | Pro | Cys | Leu | Gly | Ala | Thr | Glu | Asn | Ser | Gln | Thr | Lys | Lys | | 20 | 25 | | 30 |
| Val | Lys | Gln | Pro | Val | Arg | Ser | His | Leu | Arg | Val | Lys | Arg | Gly | Trp | | 35 | 40 | | 45 |
| Val | Trp | Asn | Gln | Phe | Phe | Val | Pro | Glu | Glu | Met | Asn | Thr | Thr | Ser | | 50 | 55 | | 60 |
| His | His | Ile | Gly | Gln | Leu | Arg | Ser | Asp | Leu | Asp | Asn | Gly | Asn | Asn | | 65 | 70 | | 75 |
| Ser | Phe | Gln | Tyr | Lys | Leu | Leu | Gly | Ala | Gly | Ala | Gly | Ser | Thr | Phe | | 80 | 85 | | 90 |
| Ile | Ile | Asp | Glu | Arg | Thr | Gly | Asp | Ile | Tyr | Ala | Ile | Gln | Lys | Leu | | 95 | 100 | | 105 |
| Asp | Arg | Glu | Glu | Arg | Ser | Leu | Tyr | Ile | Leu | Arg | Ala | Gln | Val | Ile | | 110 | 115 | | 120 |
| Asp | Ile | Ala | Thr | Gly | Arg | Ala | Val | Glu | Pro | Glu | Ser | Glu | Phe | Val | | 125 | 130 | | 135 |
| Ile | Lys | Val | Ser | Asp | Ile | Asn | Asp | Asn | Glu | Pro | Lys | Phe | Leu | Asp | | 140 | 145 | | 150 |
| Glu | Pro | Tyr | Glu | Ala | Ile | Val | Pro | Glu | Met | Ser | Pro | Glu | Gly | Thr | | 155 | 160 | | 165 |
| Leu | Val | Ile | Gln | Val | Thr | Ala | Ser | Asp | Ala | Asp | Asp | Pro | Ser | Ser | | 170 | 175 | | 180 |
| Gly | Asn | Asn | Ala | Arg | Leu | Leu | Tyr | Ser | Leu | Leu | Gln | Gly | Gln | Pro | | 185 | 190 | | 195 |
| Tyr | Phe | Ser | Val | Glu | Pro | Thr | Thr | Gly | Val | Ile | Arg | Ile | Ser | Ser | | 200 | 205 | | 210 |
| Lys | Met | Asp | Arg | Glu | Leu | Gln | Asp | Glu | Tyr | Trp | Val | Ile | Ile | Gln | | 215 | 220 | | 225 |
| Ala | Lys | Asp | Met | Ile | Gly | Gln | Pro | Gly | Ala | Leu | Ser | Gly | Thr | Thr | | 230 | 235 | | 240 |
| Ser | Val | Leu | Ile | Lys | Leu | Ser | Asp | Val | Asn | Asp | Asn | Lys | Pro | Ile | | 245 | 250 | | 255 |
| Phe | Lys | Glu | Ser | Leu | Tyr | Arg | Leu | Thr | Val | Ser | Glu | Ser | Ala | Pro | | 260 | 265 | | 270 |
| Thr | Gly | Thr | Ser | Ile | Gly | Thr | Ile | Met | Ala | Tyr | Asp | Asn | Asp | Ile | | 275 | 280 | | 285 |

| | |
|-------------------------------------|-------------------------|
| Gly Glu Asn Ala Glu Met Asp Tyr Ser | Ile Glu Glu Asp Asp Ser |
| 290 | 295 300 |
| Gln Thr Phe Asp Ile Ile Thr Asn His | Glu Thr Gln Glu Gly Ile |
| 305 | 310 315 |
| Val Ile Leu Lys Lys Lys Val Asp Phe | Glu His Gln Asn His Tyr |
| 320 | 325 330 |
| Gly Ile Arg Ala Lys Val Lys Asn His | His Val Pro Glu Gln Leu |
| 335 | 340 345 |
| Met Lys Tyr His Thr Glu Ala Ser Thr | Thr Phe Ile Lys Ile Gln |
| 350 | 355 360 |
| Val Glu Asp Val Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr Tyr |
| 365 | 370 375 |
| Val Phe Glu Val Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val Gly |
| 380 | 385 390 |
| Val Val Ser Ala Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile Arg |
| 395 | 400 405 |
| Tyr Ser Ile Thr Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn Gly |
| 410 | 415 420 |
| Thr Ile Thr Thr Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala Trp |
| 425 | 430 435 |
| Tyr Asn Leu Ser Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu Gln |
| 440 | 445 450 |
| Ile Ser Ser Ile Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn Asp |
| 455 | 460 465 |
| His Ala Pro Glu Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys Glu |
| 470 | 475 480 |
| Asn Ala Gly Ser Gly Gln Val Ile Gln | Thr Ile Ser Ala Val Asp |
| 485 | 490 495 |
| Arg Asp Glu Ser Ile Glu Glu His His | Phe Tyr Phe Asn Leu Ser |
| 500 | 505 510 |
| Val Glu Asp Thr Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn Gln |
| 515 | 520 525 |
| Asp Asn Thr Ala Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn Leu |
| 530 | 535 540 |
| Gln Glu Glu Pro Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp Asn |
| 545 | 550 555 |
| Gly Ile Pro Ser Leu Thr Ser Thr Asn | Thr Leu Thr Ile His Val |
| 560 | 565 570 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cys | Asp | Cys | Gly | Asp | Ser | Gly | Ser | Thr | Gln | Thr | Cys | Gln | Tyr | Gln | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Glu | Leu | Val | Leu | Ser | Met | Gly | Phe | Lys | Thr | Glu | Val | Ile | Ile | Ala | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Ile | Leu | Ile | Cys | Ile | Met | Ile | Ile | Phe | Gly | Phe | Ile | Phe | Leu | Thr | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Leu | Gly | Leu | Lys | Gln | Arg | Arg | Lys | Gln | Ile | Leu | Phe | Pro | Glu | Lys | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ser | Glu | Asp | Phe | Arg | Glu | Asn | Ile | Phe | Gln | Tyr | Asp | Asp | Glu | Gly | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Gly | Gly | Glu | Glu | Asp | Thr | Glu | Ala | Phe | Asp | Ile | Ala | Glu | Leu | Arg | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ser | Ser | Thr | Ile | Met | Arg | Glu | Arg | Lys | Thr | Arg | Lys | Thr | Thr | Ser | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Glu | Ile | Arg | Ser | Leu | Tyr | Arg | Gln | Ser | Leu | Gln | Val | Gly | Pro | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Asp | Ser | Ala | Ile | Phe | Arg | Lys | Phe | Ile | Leu | Glu | Lys | Leu | Glu | Glu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Asn | Thr | Asp | Pro | Cys | Ala | Pro | Pro | Phe | Asp | Ser | Leu | Gln | Thr | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Tyr | Ala | Phe | Glu | Gly | Thr | Gly | Ser | Leu | Ala | Gly | Ser | Leu | Ser | Ser | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Glu | Ser | Ala | Val | Ser | Asp | Gln | Asp | Glu | Ser | Tyr | Asp | Tyr | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Asn | Glu | Leu | Gly | Pro | Arg | Phe | Lys | Arg | Leu | Ala | Cys | Met | Phe | Gly | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ser | Ala | Val | Gln | Ser | Asn | Asn | | | | | | | | | |
| | | | | 770 | | | | | | | | | | | |

<210> 265

<211> 349

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 24, 60, 141, 226, 228, 249, 252

<223> unknown base

<400> 265

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gaatatttttn taaaaatggat agagaactgc aagatgagta ttgggtaatc 100

attcaagcca aggacatgat tggtcagcca ggagcgttgt ntggaacaac 150
aagtgtatta attaaacttt cagatgttaa tgacaataag cctatattta 200
aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250
tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300
aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 266

cttgactgtc tctgaatctg caccc 25

<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

aagtgtgga agcctccagt gtgg 24

<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

ccactacggt attagagcaa aagttaaaaa ccatcatggt tcctggagca 50

gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

gcaacctcag cttctagtat ccagactcca gcgccgcccc gggcgcgagc 50

cccaaccccg acccagagct tctccagcgg cggcgcgagc agcagggctc 100

cccgccttaa cttcctccgc ggggcccgag caccttcggg agtccgggtt 150

gcccacctgc aaactctccg ctttctgcac ctgccacccc tgagccagcg 200
cgggcccccg agcgagtcac ggccaacgcg gggctgcagc tgttgggctt 250
cattctcgcc ttcctgggat ggatcggcgc catcgtcagc actgccctgc 300
cccagtggag gatttactcc tatgccggcg acaacatcgt gaccgcccag 350
gccatgtacg aggggctgtg gatgtcctgc gtgtcgcaga gcaccgggca 400
gatccagtgc aaagtctttg actccttgct gaatctgagc agcacattgc 450
aagcaaccgc tgccttgatg gtggttggca tcctcctggg agtgatagca 500
atctttgtgg ccaccgttgg catgaagtgt atgaagtgt tggaagacga 550
tgaggtgcag aagatgagga tggctgtcat tgggggtgcg atatttcttc 600
ttgcaggtct ggctatttta gttgccacag catggtatgg caatagaatc 650
gttcaagaat tctatgaccc tatgacccca gtcaatgcca ggtagaatt 700
tggtcaggct ctcttactg gctgggctgc tgcttctctc tgccttctgg 750
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acaccaaggc cctatccaaa acctgcacct tccagcggga aagactacgt 850
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acattgagat actatcatta acattaggac cttagaattt tgggtattgt 950
aatctgaagt atggtattac aaaacaaaca aacaaacaaa aaacccatgt 1000
gttaaaatac tcagtgttaa acatggctta atcttatttt atcttctttc 1050
ctcaatatag gaggaagat ttttccattt gtattactgc ttccattga 1100
gtaatcatal tcaaatgggg gaaggggtgc tccttaaata tatatagata 1150
tgtatatata catgtttttc tattaataat agacagtaaa atactattct 1200
cattatgttg atactagcat acttaaaata tctctaaaat aggtaaatgt 1250
atttaattcc atattgatga agatgtttat tggatatatt tctttttcgt 1300
ccttatatac atatgtaaca gtcaaatatc atttactctt cttcattagc 1350
tttgggtgcc tttgccacaa gacctagcct aatttaccaa ggatgaattc 1400
tttcaattct tcatgcgtgc ccttttcata tacttatttt attttttacc 1450
ataatcttat agcacttgca tcgttattaa gcccttattt gttttgtgtt 1500
tcattggtct ctatctcctg aatctaacac atttcatagc ctacatttta 1550
gtttctaaag ccaagaagaa tttattacaa atcagaactt tggaggcaaa 1600

tctttctgca tgaccaaagt gataaattcc tggtgacctt cccacacaat 1650
ccctgtactc tgacccatag cactcttggt tgctttgaaa atatttgtcc 1700
aattgagtag ctgcatgctg ttccccagg tggtgtaaca caactttatt 1750
gattgaattt ttaagctact tattcatagt tttatatccc cctaaactac 1800
ctttttgttc cccattcctt aattgtattg ttttccaag tgtaattatc 1850
atgcgtttta tatcttcta ataagggtgtg gtctgtttgt ctgaacaaag 1900
tgctagactt tctggagtga taatctggtg acaaatttc tctctgtagc 1950
tgtaagcaag tcacttaatc tttctacctc ttttttctat ctgccaaatt 2000
gagataatga tacttaacca gttagaagag gtagtgtgaa tattaattag 2050
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tatttgctca gctggctgag aactgaaga agtcactgaa caaacctac 2150
acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctattt 2200
ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250
ctctctacca gtctatttcc actgaacaaa acctacgcac ataccttcat 2300
gtggctcagt gccttcctct ctctaccagt ctatttccat tctttcagct 2350
gtgtctgaca tgtttggtct ctgttccatt ttaacaactg ctcttacttt 2400
tccagtctgt acagaatgct atttcaactg agcaagatga tgtaatggaa 2450
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caatcaccgt ctgtgtttga gcaaggcatt tggctgctgt aagcttattg 2550
cttcatctgt aagcgggtgt ttgtaattcc tgatcttccc acctcacagt 2600
gatgttggtg ggatccagtg agatagaata catgtaagtg tggttttgta 2650
atttaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700
gttttggtgt tgcttttcaa atgtttgaaa ataaaaaaaa tgттаag 2747

<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asn | Ala | Gly | Leu | Gln | Leu | Leu | Gly | Phe | Ile | Leu | Ala | Phe |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

Leu Gly Trp Ile Gly Ala Ile Val Ser Thr Ala Leu Pro Gln Trp

| | 20 | 25 | 30 |
|---|-----|-----|-----|
| Arg Ile Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala | 35 | 40 | 45 |
| Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly | 50 | 55 | 60 |
| Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser | 65 | 70 | 75 |
| Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu | 80 | 85 | 90 |
| Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met | 95 | 100 | 105 |
| Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val | 110 | 115 | 120 |
| Ile Gly Gly Ala Ile Phe Leu Leu Ala Gly Leu Ala Ile Leu Val | 125 | 130 | 135 |
| Ala Thr Ala Trp Tyr Gly Asn Arg Ile Val Gln Glu Phe Tyr Asp | 140 | 145 | 150 |
| Pro Met Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Gln Ala Leu | 155 | 160 | 165 |
| Phe Thr Gly Trp Ala Ala Ala Ser Leu Cys Leu Leu Gly Gly Ala | 170 | 175 | 180 |
| Leu Leu Cys Cys Ser Cys Pro Arg Lys Thr Thr Ser Tyr Pro Thr | 185 | 190 | 195 |
| Pro Arg Pro Tyr Pro Lys Pro Ala Pro Ser Ser Gly Lys Asp Tyr | 200 | 205 | 210 |

Val

<210> 271

<211> 564

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 21, 69, 163, 434, 436, 444

<223> unknown base

<400> 271

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ggatggatcg gcgccatcnt cacactgccc ttccccagtg gaggatttta 100

ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150

ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
 ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250
 tgatggtggt tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300
 gttggcatga agtgtatgaa gtgcttgaa gacgatgagg tgcagaagat 350
 gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
 ttttagttgc cacagcatgg tatggcaata gaancnttca acanttctat 450
 gacctatga cccagtc aa tgccaggtac gaatttggtc aggtctctct 500
 cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550
 gctgttcctg tccc 564

<210> 272

<211> 498

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341

<223> unknown base

<400> 272

acccttgacc caacgcggcc ccccgaccgn ttcattggcca aacgcgggnc 50
 tccagctgtt gggcttcatt ctcccttcc tgggatggac cggcgcccat 100
 cntcagcact gccctgcccc agtggaggat ttactcctat nccggnaca 150
 acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtcctgcgtg 200
 tcgcagagca ccgggcagat ccagtgcaa gtctttgact cccttgctga 250
 atctgagcag cacattgcaa gcaaccctg ccttgatggt ggttggcatc 300
 ctctggggag tgatagcaat cttnttggcc accgttgtnn ntgaagtga 350
 tgaagtgcct ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400
 gggggcgcga tatttcttct tgcaggtctg gctatttttag ttgccacagc 450
 atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273

<211> 552

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394
<223> unknown base

<400> 273

gggcccgacc attatccaac cgggntcact gttggctcat ctccctcctg 50
gatgaancgc gccatcntca gactccctgc cccatggaga tttnnccctat 100
gctggcgaca acatcntgac cccagccat gtacgagggg ctttgaacgt 150
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200
tgctgaatct gngcagcaca ttgcagcaac ccntgccctg atggtggttg 250
gcatectcct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300
tgtatgaagt gcttggaaga cgatgaggtg cagaagatga ggatggctgt 350
cattgggggc gcgatatttc ttcttgacagg tctggctatt tnnngttgcc 400
acagcatggt atggcaatag aatcggtcaa gaattctatg accctatgac 450
cccagtcaat gccaggtacg aatttggtca ggctctcttc actggctggg 500
ctgctgcttc tctctgcctt ctgggaggtg ccctactttg ctgttcctgc 550
ga 552

<210> 274

<211> 526

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407

<223> unknown base

<400> 274

attctcccct cctggatgga tcgcnccacc gtcacattgc cttcccccan 50
tggaggattn actcctatgc tggcgacaac atcgtgaccc cccaggccat 100
ttaccgaggg gctttgatg tcntgcntgt cgcagagcac cgggcagatc 150
ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
caaccctgac cttgatgggg ttggcatcct cctgggagtg atagcaacct 250
ttgtggccac cgttggcatg aagtgtatga agtgcttggg agacgatgag 300
gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttggtg 350
caggctctggc tatttttagtn gccacagcat ggtatggcaa tagantnntt 400
cnngnnntct atgaccctat gacccagtc aatgccaggt acgaatttgg 450

tcaggctctc ttcactggct gggctgctgc ttctctctgc cttctgggag 500

gtgccctact ttgctgttcc tgtccc 526

<210> 275

<211> 398

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274

<223> unknown base

<400> 275

agagcaccgg cagatcccag tncaaagtct ttgacccttg ctgaatctga 50

gcagcacatt ncaagcaacc ccttgcccttg aagggtggtg ncatcccccc 100

tgggagtga tagcaatctt tgtggccacc gttggcatga agtntatgaa 150

gtgcttgga gacgatgagg tgcagaagat gaggatggct gtcattgggg 200

gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250

tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtcaa 300

tgccaggtag gaatttggtc aggtctctct cactggctgg gctgctgctt 350

ctctctgcct tctgggaggt gccctacttt gctgttcttg tccccgaa 398

<210> 276

<211> 495

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476

<223> unknown base

<400> 276

agcaatgccc tgccccagt ggaggattaa ttcctatgnt ggggacaaca 50

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cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150

gagcagcaca ttgcaagcaa cccgtgcctt gatggtgggt ggcatcttcc 200

tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250

tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300

cgcgatattt cttnttgtag gtctggctat tttagttgcc acagcatggt 350

atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400

gccagggtacg aatttgggtca ggctttnttc actggctggg ctgctgcttn 450

tttctgcctt ntgggaggtg ccctantttg ctgttcctgc gaacc 495

<210> 277

<211> 200

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 34, 87, 138, 147, 163, 165-166, 172

<223> unknown base

<400> 277

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cacagcatgg tatggcaata gaatcggtca agaattntat gaccctatga 100

ccccagtcaa tgccagggtac gaatttgggc aggctctntt cactggntgg 150

gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcctg 200

<210> 278

<211> 542

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396

<223> unknown base

<400> 278

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ttacnctat gctggcgaac aacatcntga ccgcccaggc catgtacgag 100

gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgc 150

aagtctttga ctcttgctg aatctgagca gcacattgca agcaacctg 200

ccttgatggg ggttggcatc ctctgggag tgatagcaat ctttgtggcc 250

accgttggca tgaaagtgt tgaagtgtt ggaagacgat gaggtgcaga 300

agatgaggat ggctgtcatt gggggcgca tatttcttct tgcaggctctg 350

gctatttttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400

tctatgaccc tatgacccca gtcaatgcca ggtacgaatt tggtcaggct 450

ctcttcaactg gctgggctgc tgcttctctc tgccttcttg gaggtgccct 500

actttgctgt tctgtcccc gaaaaacaac ctcttaccga cg 542

<210> 279
<211> 548
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 90, 115, 147, 228, 387
<223> unknown base

<400> 279
cggggctgca gctgttgggc ttcattctgc ttcctgggat ggaatcggcg 50
ccatcgctcag cactgccctg ccccatggag gatttactcn tatgctggcg 100
acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
tgtcgcagag caccgggcag atccagtga aagtctttga ctcttgctg 200
aatctgagca gcacattgca agcaacctg ccttgatggt ggttggcatc 250
ctcctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350
ggggcgcgat atttcttctt gcaggtctgg ctatttntag ttgccacagc 400
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450
tcaatgccag gtacgaattt ggtcaggctc tcttcaactgg ctgggctgct 500
gcttctctct gccttctggg aggtgcccta ctttgtgtt cctgcgaa 548

<210> 280
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 280
cgagcgagtc atggccaacg c 21

<210> 281
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 281
gtgtcacacg tagtctttcc cgctgg 26

<210> 282
<211> 43

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 282
ctgcagctgt tgggcttcat tctgccttc ctgggatgga tcg 43

<210> 283
<211> 2285
<212> DNA
<213> Homo sapiens

<400> 283
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ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccacccgg 100
tagaggaccc ccgcccgtgc cccgaccggt cccgccttt ttgtaaaact 150
taaagcgggc gcagcattaa cgcttccgc cccggtgacc tctcaggggt 200
ctccccgcca aagggtctcc gccgctaagg aacatggcga aggtggagca 250
ggtcctgagc ctcgagccgc agcacgagct caaattccga ggtcccttca 300
ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400
caacagcggg atcatcgatg caggggcctc aattaatgta tctgtgatgt 450
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650
attatatcca caactgcata aaagacagaa acaccaatag tgtctaagtc 700
tctgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750
gtaagaggct gcaagggtgaa gttcagaggc tacgggagga gaacaagcag 800
ttcaaggaag aagatggact gcggatgagg aagacagtgc agagcaacag 850
ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcacc 900
ggctcttggc tctggtgggt ttgttcttta tcgttggtgt aattattggg 950
aagattgcct tgtagaggta gcatgcacag gatggtaa at tggattggtg 1000
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050

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<210> 284

<211> 243

<212> PRT

<213> Homo sapiens

<400> 284

Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu

| 1 | 5 | 10 | 15 |
|---|-----|-----|-----|
| Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu | 20 | 25 | 30 |
| Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys | 35 | 40 | 45 |
| Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile | 50 | 55 | 60 |
| Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro | 65 | 70 | 75 |
| Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val | 80 | 85 | 90 |
| Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val | 95 | 100 | 105 |
| Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg | 110 | 115 | 120 |
| Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val | 125 | 130 | 135 |
| Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr | 140 | 145 | 150 |
| Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu | 155 | 160 | 165 |
| Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val | 170 | 175 | 180 |
| Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly | 185 | 190 | 195 |
| Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala | 200 | 205 | 210 |
| Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu | 215 | 220 | 225 |
| Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys | 230 | 235 | 240 |

Ile Ala Leu

<210> 285

<211> 418

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 40, 53, 68, 119, 134, 177-178, 255
<223> unknown base

<400> 285
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ctggagtcag gacaatggnt cgggctgcag aggnntagaa gcgagggcac 150
cagcagtttt ggggtggggag caagggngga gagaaactct tcagcgaatc 200
cttctagtac tagttgagag tttgactgtg aattaatttt atgccataaa 250
agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300
taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350
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gttaacttta aaatgagc 418

<210> 286
<211> 543
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 73, 97
<223> unknown base

<400> 286
tattgtaaag gccattttaa accattggta ggccttggtg catgatgctg 50
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gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150
gtccccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgagagg 300
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcttt 350
gttcacttaa agggaccaag ctaaattgta ttggttcatg tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450
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gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

<210> 287
<211> 270

<212> DNA
<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

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catatccatg ggatttaaatt ttatcataac catgtgtaaa aagaaattaa 150
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250
agttaaaaat gtatagtaac 270

<210> 288

<211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base

<400> 288

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gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
actgattgac ccagcgcttt ggaaataaat ggcagtgcct tgttcantta 200
aagggaccaa gctaaatttg tattggttca tgtagtgaag tcaaactgtt 250
attcagagat gtttaatgca tatttaantt atttaatgta ttnatntca 300
tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
ntgttgggtg aactggtatt gctgctggag ggctgtgggc tcctctgtct 400
ttggagagtc tggatcatgtg gaggtggg 428

<210> 289

<211> 320

<212> DNA

<213> Homo sapiens

<400> 289

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atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
tactcgtcat aagtgaagagg cgtgtgttga ctgattgacc cagcgctttg 150
gaaataaatg gcagtgcctt gttcacttaa agggaccaag ctaaatttgt 200
attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
atttaactta tttaatgtat ttcattcat gttttcttat tgcacaaga 300
gtacagttaa tgctgcgtgc 320

<210> 290

<211> 609

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
447, 481, 513, 532, 584, 598

<223> unknown base

<400> 290

aaacctttaa aagttgaggg gaaaagaatg atcctttatt aatgacaagg 50
gaaacntgn gtaatgccac aatggcatat tgtaaatgtc attttaaaca 100
ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150
cttcctcgcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200
ggggagtgcg gtctgtcca cacagtagtc cccangtggc ccantcccgg 250
cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300
ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350
cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccacgc 400
gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450
atttgatttg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500
atgcatattt aanttattta atgtatttca tntcatgttt tcttattgtc 550
acaagggtac agttaatgct gcgtgctgct gaantctgtt gggatgaantg 600
gtattgctg 609

<210> 291

<211> 493

<212> DNA

<213> Homo sapiens

<400> 291

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ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
gagaggcgtg tgttgactga ttgaccacgc gctttggaaa taaatggcag 250
tgctttgttc acttaaaggg accaagctaa atttgtattg gttcatgtag 300
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atgtatttca tctcatgttt tcttattgtc acaagagtac agttaatgct 400
gcgtgctgct gaactctgtt gggatgaactg gtattgctgc tggagggctg 450
tgggctcctc tgtctctgga gagtctggtc atgtggaggt ggg 493

<210> 292

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 292

gcaccaccgt aggtacttgt gtgaggc 27

<210> 293

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 293

aaccaccaga gccaagagcc ggg 23

<210> 294

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 294

cagcggaatc atcgatgcag gggcctcaat taatgtatct gtgatgttac 50

<210> 295

<211> 2530

<212> DNA

<213> Homo sapiens

<400> 295

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ggctggctga gaggtccca gctgcagcgt ccccgccgc ctctcggga 100
gctctgatct cagctgacag tgccctcggg gaccaaaca gcctggcagg 150
gtctcacttt gttgcccagg ctggagttca gtgccatgat catgggttac 200
tgcagccttg acctcctggg ttcaagcgat cctgctgagt agctgggact 250
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ttccatctca ccagccccgc atttgaggca gatgctaaga tgatggtaaa 450
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ctgaattgga ggattatctt tcctatgaga ctgtctttga gaatggcacc 550
cgaaccttaa ccagggtgaa agttcaagat ttggttcttg agccgactca 600
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cctttcagca cagctgtgaa gctttccacg ggctgtagtg gcattctcat 750
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<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Thr Leu Ile Asp Gly Ser Glu Met Glu Trp Asp Phe Met Trp His

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ser | Gly | Gly | Asp | Gln | Arg | Glu | Gly | Thr | Arg | Glu | His | Leu | Gln | Glu | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Arg | Ala | Lys | Gly | Gly | Arg | Arg | Arg | Lys | Lys | Ser | Gly | Arg | Gly | Gln | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Arg | Ile | Ala | Glu | Gly | Arg | Pro | Ser | Phe | Gln | Trp | Thr | Arg | Val | Lys | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Asn | Thr | His | Ile | Pro | Lys | Gly | Trp | Ala | Arg | Gly | Gly | Met | Gly | Asp | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ala | Thr | Leu | Asp | Tyr | Asp | Tyr | Ala | Leu | Leu | Glu | Leu | Lys | Arg | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| His | Lys | Lys | Lys | Tyr | Met | Glu | Leu | Gly | Ile | Ser | Pro | Thr | Ile | Lys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Lys | Met | Pro | Gly | Gly | Met | Ile | His | Phe | Ser | Gly | Phe | Asp | Asn | Asp | | | | | |

| | | |
|---|-----|-----|
| 305 | 310 | 315 |
| Arg Ala Asp Gln Leu Val Tyr Arg Phe Cys Ser Val Ser Asp Glu | | |
| 320 | 325 | 330 |
| Ser Asn Asp Leu Leu Tyr Gln Tyr Cys Asp Ala Glu Ser Gly Ser | | |
| 335 | 340 | 345 |
| Thr Gly Ser Gly Val Tyr Leu Arg Leu Lys Asp Pro Asp Lys Lys | | |
| 350 | 355 | 360 |
| Asn Trp Lys Arg Lys Ile Ile Ala Val Tyr Ser Gly His Gln Trp | | |
| 365 | 370 | 375 |
| Val Asp Val His Gly Val Gln Lys Asp Tyr Asn Val Ala Val Arg | | |
| 380 | 385 | 390 |
| Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys Leu Trp Ile His Gly | | |
| 395 | 400 | 405 |
| Asn Asp Ala Asn Cys Ala Tyr Gly | | |
| 410 | | |

<210> 297

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 297

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<210> 298

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 298

catcggtccc gtgaatccag aggc 24

<210> 299

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 299

gaaggaggc cttcctttca gtggacccgg gtcaagaata ccac 45

<210> 300

<211> 1869
<212> DNA
<213> Homo sapiens

<400> 300

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 ctgtagccca aaaacaaagc cccacataaa agaggaatgc atcgtaccca 1600
 ctccctgcta taaacccaaa gagaaacttc cagtcgaggc caagttgcca 1650
 tggttcaaac aagctcaaga gctagaagaa ggagctgctg tgtcagagga 1700
 gccctcgtaa gttgtaaaag cacagactgt tctatatttg aaactgtttt 1750
 gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800
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 ttagtttcaa aaaaaaaaaa 1869

<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Cys | Cys | Arg | Arg | Ala | Thr | Pro | Gly | Thr | Leu | Leu | Leu | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ala | Phe | Leu | Leu | Leu | Ser | Ser | Arg | Thr | Ala | Arg | Ser | Glu | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Arg | Asp | Gly | Leu | Trp | Asp | Ala | Trp | Gly | Pro | Trp | Ser | Glu | Cys |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ser | Arg | Thr | Cys | Gly | Gly | Gly | Ala | Ser | Tyr | Ser | Leu | Arg | Arg | Cys |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | |
|---|-----|-----|-----|
| Pro Lys Val Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp | 140 | 145 | 150 |
| Met Cys Ile Ser Gly Leu Cys Gln Ile Val Gly Cys Asp His Gln | 155 | 160 | 165 |
| Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly Val Cys Asn Gly | 170 | 175 | 180 |
| Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr Lys Ser Gln | 185 | 190 | 195 |
| Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Leu Pro Tyr | 200 | 205 | 210 |
| Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His Leu | 215 | 220 | 225 |
| Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser | 230 | 235 | 240 |
| Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Val Asp | 245 | 250 | 255 |
| Phe Gln Lys Phe Pro Asp Lys Glu Ile Leu Arg Met Ala Gly Pro | 260 | 265 | 270 |
| Leu Thr Ala Asp Phe Ile Val Lys Ile Arg Asn Ser Gly Ser Ala | 275 | 280 | 285 |
| Asp Ser Thr Val Gln Phe Ile Phe Tyr Gln Pro Ile Ile His Arg | 290 | 295 | 300 |
| Trp Arg Glu Thr Asp Phe Phe Pro Cys Ser Ala Thr Cys Gly Gly | 305 | 310 | 315 |
| Gly Tyr Gln Leu Thr Ser Ala Glu Cys Tyr Asp Leu Arg Ser Asn | 320 | 325 | 330 |
| Arg Val Val Ala Asp Gln Tyr Cys His Tyr Tyr Pro Glu Asn Ile | 335 | 340 | 345 |
| Lys Pro Lys Pro Lys Leu Gln Glu Cys Asn Leu Asp Pro Cys Pro | 350 | 355 | 360 |
| Ala Ser Asp Gly Tyr Lys Gln Ile Met Pro Tyr Asp Leu Tyr His | 365 | 370 | 375 |
| Pro Leu Pro Arg Trp Glu Ala Thr Pro Trp Thr Ala Cys Ser Ser | 380 | 385 | 390 |
| Ser Cys Gly Gly Gly Ile Gln Ser Arg Ala Val Ser Cys Val Glu | 395 | 400 | 405 |
| Glu Asp Ile Gln Gly His Val Thr Ser Val Glu Glu Trp Lys Cys | 410 | 415 | 420 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Thr | Pro | Lys | Met | Pro | Ile | Ala | Gln | Pro | Cys | Asn | Ile | Phe | 425 | 430 | 435 |
| Asp | Cys | Pro | Lys | Trp | Leu | Ala | Gln | Glu | Trp | Ser | Pro | Cys | Thr | Val | 440 | 445 | 450 |
| Thr | Cys | Gly | Gln | Gly | Leu | Arg | Tyr | Arg | Val | Val | Leu | Cys | Ile | Asp | 455 | 460 | 465 |
| His | Arg | Gly | Met | His | Thr | Gly | Gly | Cys | Ser | Pro | Lys | Thr | Lys | Pro | 470 | 475 | 480 |
| His | Ile | Lys | Glu | Glu | Cys | Ile | Val | Pro | Thr | Pro | Cys | Tyr | Lys | Pro | 485 | 490 | 495 |
| Lys | Glu | Lys | Leu | Pro | Val | Glu | Ala | Lys | Leu | Pro | Trp | Phe | Lys | Gln | 500 | 505 | 510 |
| Ala | Gln | Glu | Leu | Glu | Glu | Gly | Ala | Ala | Val | Ser | Glu | Glu | Pro | Ser | 515 | 520 | 525 |

<210> 302
 <211> 1533
 <212> DNA
 <213> Homo sapiens

<400> 302
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 ctggggcctg acagatggca gtggccactg cggcggcagt actggccgct 100
 ctggggcgggg cgctgtggct ggcggcccgc cggttcgtgg ggcccagggt 150
 ccagcggctg cgcagaggcg gggaccccg cctcatgcac gggaagactg 200
 tgctgatcac cggggcgaaac agcggcctgg gccgcgccac ggccgccgag 250
 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300
 cgccgaggag ggcgggggtc agctccgccg cgagctccgc caggccgcgg 350
 agtgcgggcc agagcctggc gtcagcgggg tgggcgagct catagtccgg 400
 gagctggacc tcgcctcgct gcgctcgggt cgcgccttct gccaggaaat 450
 gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500
 tccagtgcc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550
 gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600
 caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650
 aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700
 aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750

ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800
 atcctggtat tgtacggaca aatctgggga ggcacataca cattccactg 850
 ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaaactcc 900
 agtagaaggt gccagactt ccattttattt ggcctcttca cctgaggtag 950
 aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000
 cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050
 agtgatgggtt ggcctgctaa aataggaaca aggagtaaaa gagctgttta 1100
 taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150
 acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200
 ggtacatgtg ggtattttgg agttactgaa aaattatttt tgggataaga 1250
 gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300
 aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350
 tggatgacat attaataattt gtcagaatta agtgactcaa agtgctatcg 1400
 agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450
 ttactacaat gtttggtggt tgtgtggaaa ttatctgcct ggtgtgtgca 1500
 cacaagtctt acttgaata aatttactgg tac 1533

<210> 303

<211> 336

<212> PRT

<213> Homo sapiens

<400> 303

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Ala | Thr | Ala | Ala | Ala | Val | Leu | Ala | Ala | Leu | Gly | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Trp | Leu | Ala | Ala | Arg | Arg | Phe | Val | Gly | Pro | Arg | Val | Gln |
| | | | 20 | | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Arg | Arg | Gly | Gly | Asp | Pro | Gly | Leu | Met | His | Gly | Lys | Thr |
| | | | | 35 | | | | | 40 | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ile | Thr | Gly | Ala | Asn | Ser | Gly | Leu | Gly | Arg | Ala | Thr | Ala |
| | | | | 50 | | | | | 55 | | | | 60 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Glu | Leu | Leu | Arg | Leu | Gly | Ala | Arg | Val | Ile | Met | Gly | Cys | Arg |
| | | | | 65 | | | | | 70 | | | | 75 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Ala | Arg | Ala | Glu | Glu | Ala | Ala | Gly | Gln | Leu | Arg | Arg | Glu |
| | | | | 80 | | | | | 85 | | | | 90 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Gln | Ala | Ala | Glu | Cys | Gly | Pro | Glu | Pro | Gly | Val | Ser | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 95 | 100 | 105 |
|-----------------|---------------------|---------------------|---------|
| Val Gly Glu Leu | Ile Val Arg Glu Leu | Asp Leu Ala Ser Leu | Arg |
| | 110 | 115 | 120 |
| Ser Val Arg Ala | Phe Cys Gln Glu Met | Leu Gln Glu Glu | Pro Arg |
| | 125 | 130 | 135 |
| Leu Asp Val Leu | Ile Asn Asn Ala Gly | Ile Phe Gln Cys Pro | Tyr |
| | 140 | 145 | 150 |
| Met Lys Thr Glu | Asp Gly Phe Glu Met | Gln Phe Gly Val Asn | His |
| | 155 | 160 | 165 |
| Leu Gly His Phe | Leu Leu Thr Asn Leu | Leu Leu Gly Leu Leu | Lys |
| | 170 | 175 | 180 |
| Ser Ser Ala Pro | Ser Arg Ile Val Val | Val Ser Ser Lys Leu | Tyr |
| | 185 | 190 | 195 |
| Lys Tyr Gly Asp | Ile Asn Phe Asp Asp | Leu Asn Ser Glu Gln | Ser |
| | 200 | 205 | 210 |
| Tyr Asn Lys Ser | Phe Cys Tyr Ser Arg | Ser Lys Leu Ala Asn | Ile |
| | 215 | 220 | 225 |
| Leu Phe Thr Arg | Glu Leu Ala Arg Arg | Leu Glu Gly Thr Asn | Val |
| | 230 | 235 | 240 |
| Thr Val Asn Val | Leu His Pro Gly Ile | Val Arg Thr Asn Leu | Gly |
| | 245 | 250 | 255 |
| Arg His Ile His | Ile Pro Leu Leu Val | Lys Pro Leu Phe Asn | Leu |
| | 260 | 265 | 270 |
| Val Ser Trp Ala | Phe Phe Lys Thr Pro | Val Glu Gly Ala Gln | Thr |
| | 275 | 280 | 285 |
| Ser Ile Tyr Leu | Ala Ser Ser Pro Glu | Val Glu Gly Val Ser | Gly |
| | 290 | 295 | 300 |
| Arg Tyr Phe Gly | Asp Cys Lys Glu Glu | Glu Leu Leu Pro Lys | Ala |
| | 305 | 310 | 315 |
| Met Asp Glu Ser | Val Ala Arg Lys Leu | Trp Asp Ile Ser Glu | Val |
| | 320 | 325 | 330 |
| Met Val Gly Leu | Leu Lys | | |
| | 335 | | |

<210> 304

<211> 521

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 20, 34, 62, 87, 221, 229

<223> unknown base

<400> 304

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gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100
ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150
gtgatcagga atggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
tttgatattg gaatagcctg ntaagaggna catgtgggta ttttgagatt 250
actgaaaaat tatttttggg ataagagaat ttcagcaaag atgttttaaa 300
tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500
tggaattat ctgcctggct t 521

<210> 305

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 305

ccaggaaatg ctccaggaag agcc 24

<210> 306

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 306

gccccatgaca ccaaattgaa gagtgg 26

<210> 307

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 307

aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308

<211> 1523

<212> DNA

<213> Homo sapiens

<400> 308

gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 50
cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100
ccagcgcctg tccctgtcac ggaccccagc gttaccatgc atcctgccgt 150
cttctatcc ttacccgacc tcagatgctc ctttctgctc ctggtaactt 200
gggttttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
atagatgaaa ttttaaacaa tgctgatgtt gcttttagtaa atttttatgc 300
tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 450
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650
cggacaacta tagagttttt gaacgagtag cgaatatattt gcatgatgac 700
tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttacia ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950
atacagaaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000
agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050
acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100
ctattgacag ctttaggcat atgtatgtgt ttggagactt caaagatgta 1150
ttaattcctg gaaaactcaa gcaattcgta tttgacttac attctggaaa 1200
actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250

gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300
 aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350
 gcttttaaaaaa cttgaaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400
 cctacgtggt ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450
 tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500
 aaaaaaaaaa aaaaaaaaaa aaa 1523

<210> 309

<211> 406

<212> PRT

<213> Homo sapiens

<400> 309

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | His | Pro | Ala | Val | Phe | Leu | Ser | Leu | Pro | Asp | Leu | Arg | Cys | Ser | 1 | 5 | 10 | 15 |
| Leu | Leu | Leu | Leu | Val | Thr | Trp | Val | Phe | Thr | Pro | Val | Thr | Thr | Glu | 20 | 25 | 30 | |
| Ile | Thr | Ser | Leu | Ala | Thr | Glu | Asn | Ile | Asp | Glu | Ile | Leu | Asn | Asn | 35 | 40 | 45 | |
| Ala | Asp | Val | Ala | Leu | Val | Asn | Phe | Tyr | Ala | Asp | Trp | Cys | Arg | Phe | 50 | 55 | 60 | |
| Ser | Gln | Met | Leu | His | Pro | Ile | Phe | Glu | Glu | Ala | Ser | Asp | Val | Ile | 65 | 70 | 75 | |
| Lys | Glu | Glu | Phe | Pro | Asn | Glu | Asn | Gln | Val | Val | Phe | Ala | Arg | Val | 80 | 85 | 90 | |
| Asp | Cys | Asp | Gln | His | Ser | Asp | Ile | Ala | Gln | Arg | Tyr | Arg | Ile | Ser | 95 | 100 | 105 | |
| Lys | Tyr | Pro | Thr | Leu | Lys | Leu | Phe | Arg | Asn | Gly | Met | Met | Met | Lys | 110 | 115 | 120 | |
| Arg | Glu | Tyr | Arg | Gly | Gln | Arg | Ser | Val | Lys | Ala | Leu | Ala | Asp | Tyr | 125 | 130 | 135 | |
| Ile | Arg | Gln | Gln | Lys | Ser | Asp | Pro | Ile | Gln | Glu | Ile | Arg | Asp | Leu | 140 | 145 | 150 | |
| Ala | Glu | Ile | Thr | Thr | Leu | Asp | Arg | Ser | Lys | Arg | Asn | Ile | Ile | Gly | 155 | 160 | 165 | |
| Tyr | Phe | Glu | Gln | Lys | Asp | Ser | Asp | Asn | Tyr | Arg | Val | Phe | Glu | Arg | 170 | 175 | 180 | |
| Val | Ala | Asn | Ile | Leu | His | Asp | Asp | Cys | Ala | Phe | Leu | Ser | Ala | Phe | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asp | Val | Ser | Lys | Pro | Glu | Arg | Tyr | Ser | Gly | Asp | Asn | Ile | Ile | 200 | 205 | 210 |
| Tyr | Lys | Pro | Pro | Gly | His | Ser | Ala | Pro | Asp | Met | Val | Tyr | Leu | Gly | 215 | 220 | 225 |
| Ala | Met | Thr | Asn | Phe | Asp | Val | Thr | Tyr | Asn | Trp | Ile | Gln | Asp | Lys | 230 | 235 | 240 |
| Cys | Val | Pro | Leu | Val | Arg | Glu | Ile | Thr | Phe | Glu | Asn | Gly | Glu | Glu | 245 | 250 | 255 |
| Leu | Thr | Glu | Glu | Gly | Leu | Pro | Phe | Leu | Ile | Leu | Phe | His | Met | Lys | 260 | 265 | 270 |
| Glu | Asp | Thr | Glu | Ser | Leu | Glu | Ile | Phe | Gln | Asn | Glu | Val | Ala | Arg | 275 | 280 | 285 |
| Gln | Leu | Ile | Ser | Glu | Lys | Gly | Thr | Ile | Asn | Phe | Leu | His | Ala | Asp | 290 | 295 | 300 |
| Cys | Asp | Lys | Phe | Arg | His | Pro | Leu | Leu | His | Ile | Gln | Lys | Thr | Pro | 305 | 310 | 315 |
| Ala | Asp | Cys | Pro | Val | Ile | Ala | Ile | Asp | Ser | Phe | Arg | His | Met | Tyr | 320 | 325 | 330 |
| Val | Phe | Gly | Asp | Phe | Lys | Asp | Val | Leu | Ile | Pro | Gly | Lys | Leu | Lys | 335 | 340 | 345 |
| Gln | Phe | Val | Phe | Asp | Leu | His | Ser | Gly | Lys | Leu | His | Arg | Glu | Phe | 350 | 355 | 360 |
| His | His | Gly | Pro | Asp | Pro | Thr | Asp | Thr | Ala | Pro | Gly | Glu | Gln | Ala | 365 | 370 | 375 |
| Gln | Asp | Val | Ala | Ser | Ser | Pro | Pro | Glu | Ser | Ser | Phe | Gln | Lys | Leu | 380 | 385 | 390 |
| Ala | Pro | Ser | Glu | Tyr | Arg | Tyr | Thr | Leu | Leu | Arg | Asp | Arg | Asp | Glu | 395 | 400 | 405 |

Leu

<210> 310
 <211> 182
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 36, 48
 <223> unknown base

<400> 310

attaaggaag aattttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182

<210> 311

<211> 598

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396

<223> unknown base

<400> 311

agaggcctct ctggaagttg tcccgggtgt tcgccgcnng agcccgggtc 50
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
ccagcgctctg tccctgtcnc ggancccagc gtnaccatgc atcctgccgt 200
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250
gggttttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
atagatgaaa ttttaaacna tgctgatgtg gcttttagtca atttttatgc 350
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 500
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 312

tgagaggcct ctctggaagt tg 22

<210> 313

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 313

gtcagcgatc agtgaaagc 19

<210> 314

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 314

ccagaatgaa gtagctcggc 20

<210> 315

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 315

ccgactcaaa atgcattgtc 20

<210> 316

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 316

catttggcag gaattgtcc 19

<210> 317

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 317

ggtgctatag gccaaagg 18

<210> 318

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttctcta tccttaccog acctcagatg ctcccttctg ctcttg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

tacctgaat ccccttgtag tcccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttacactggg totcaatatg 250

cccctcttg catatcatat ttggagggtat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaacat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaa tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450

caacacacag aagaattggt ccagttaagt gcatgcaaaa agccacaaa 500

tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

tgatcagtta ctttaaaaaa tgactcctta ttttttaa gtttccacat 600

ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650
 taaatggtat tacgtataaa ttaatatata atgattacct ctggtgttga 700
 caggtttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800
 cttgtagggc tcattttggt ttcattgaaa cagtatctaa ttataaatta 850
 gctgtagata tcagggtgctt ctgatgaagt gaaaatgtat atctgactag 900
 tgggaaactt catgggtttc ctcactgtgc atgtcgatga ttatatatgg 950
 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050
 taaatatact tgctttaatt cttaagcata agtaaacaatg atataaaaaat 1100
 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaagtgtg 1150
 ttttatttgt aagacattac ttattaagaa attgggtatt atgcttactg 1200
 ttctaactctg gtggtaaagg tattcttaag aatttgcagg tactacagat 1250
 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322

<211> 144

<212> PRT

<213> Homo sapiens

<400> 322

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Thr | Phe | Ala | Ala | Phe | Cys | Tyr | Met | Leu | Ala | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Thr | Ala | Ala | Leu | Ile | Phe | Phe | Ala | Ile | Trp | His | Ile | Ile | Ala |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Phe | Asp | Glu | Leu | Lys | Thr | Asp | Tyr | Lys | Asn | Pro | Ile | Asp | Gln | Cys |
| | | | | 35 | | | | | 40 | | | | 45 | |
| Asn | Thr | Leu | Asn | Pro | Leu | Val | Leu | Pro | Glu | Tyr | Leu | Ile | His | Ala |
| | | | | 50 | | | | | 55 | | | | 60 | |
| Phe | Phe | Cys | Val | Met | Phe | Leu | Cys | Ala | Ala | Glu | Trp | Leu | Thr | Leu |
| | | | | 65 | | | | | 70 | | | | 75 | |
| Gly | Leu | Asn | Met | Pro | Leu | Leu | Ala | Tyr | His | Ile | Trp | Arg | Tyr | Met |
| | | | | 80 | | | | | 85 | | | | 90 | |
| Ser | Arg | Pro | Val | Met | Ser | Gly | Pro | Gly | Leu | Tyr | Asp | Pro | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | 105 | |

Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
110 115 120

Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
125 130 135

Gly Met Ile Tyr Val Leu Val Ser Ser
140

<210> 323

<211> 477

<212> DNA

<213> Homo sapiens

<400> 323

attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50

tgtaataccc tgaatcccct tgtactccca gactaccca tccacgcttt 100

cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtctca 150

atatgcccct cttggcatat catatttggg ggtatatgag tagaccagt 200

atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250

tctagcatat tgtcagaagg aaggatggtg caaattagct ttttatcttc 300

tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350

tagaacaaca cacagaagaa ttggtccagt taagtgcagc caaaaagcca 400

ccaaatgaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450

gaatctgata agttacttta aaaaatg 477

<210> 324

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 324

tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 325

caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 326
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 326
gtgcagcaga gtggcttaca 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 327
actggaccaa ttcttctgtg 20

<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 328
gatattctag catattgtca gaaggaagga tgggtgcaaatt tagct 45

<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 329
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggcttggcc 150
ggaggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
accctaagga agaggagttg tacgcatgtc agagagggtg caggctgttt 300
tcaatttgtc agtttgtgga tgatggaatt gacttaaata gaactaaatt 350
ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
atgcttgcca tcttgggtgc cagaatcagc tgccattcgc tgaactgaga 450

caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500
 aactctggtg aggtcattct ggagtgcacat gatggactcc gcacagagct 550
 tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600
 gttatatcc agtctaagcc agaaatccag tacgcaccac atttggagca 650
 ggagcctaca aatttgagag aatcatctct aagcaaaatg tcctatctgc 700
 aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750
 gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800
 aactcttgct ctctcgggtga tggattgct ttggatttgt tgtgcaactg 850
 ttgctacagc tgtggagcag tatgttcct ctgagaagct gagtatctat 900
 ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950
 ttctcttggtg gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000
 ctctacctac aaaagtgaat cttgctcatt ctgaaattta agcatttttc 1050
 ttttaaaaga caagtgaat agacatctaa aattccactc ctcatagagc 1100
 ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150
 caaataaagt tactcaaatc tgtg 1174

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Pro | Lys | Gly | Ser | Leu | Trp | Val | Arg | Thr | Gln | Leu | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Pro | Pro | Leu | Leu | Leu | Leu | Thr | Met | Ala | Leu | Ala | Gly | Gly | Ser |
| | | | 20 | | | | | | 25 | | | | 30 | |
| Gly | Thr | Ala | Ser | Ala | Glu | Ala | Phe | Asp | Ser | Val | Leu | Gly | Asp | Thr |
| | | | 35 | | | | | | 40 | | | | 45 | |
| Ala | Ser | Cys | His | Arg | Ala | Cys | Gln | Leu | Thr | Tyr | Pro | Leu | His | Thr |
| | | | 50 | | | | | | 55 | | | | 60 | |
| Tyr | Pro | Lys | Glu | Glu | Glu | Leu | Tyr | Ala | Cys | Gln | Arg | Gly | Cys | Arg |
| | | | 65 | | | | | | 70 | | | | 75 | |
| Leu | Phe | Ser | Ile | Cys | Gln | Phe | Val | Asp | Asp | Gly | Ile | Asp | Leu | Asn |
| | | | 80 | | | | | | 85 | | | | 90 | |
| Arg | Thr | Lys | Leu | Glu | Cys | Glu | Ser | Ala | Cys | Thr | Glu | Ala | Tyr | Ser |
| | | | 95 | | | | | | 100 | | | | 105 | |

| | | |
|-----------------|---------------------|-------------------------|
| Gln Ser Asp Glu | Gln Tyr Ala Cys His | Leu Gly Cys Gln Asn Gln |
| 110 | | 115 120 |
| Leu Pro Phe Ala | Glu Leu Arg Gln Glu | Gln Leu Met Ser Leu Met |
| 125 | | 130 135 |
| Pro Lys Met His | Leu Leu Phe Pro Leu | Thr Leu Val Arg Ser Phe |
| 140 | | 145 150 |
| Trp Ser Asp Met | Met Asp Ser Ala Gln | Ser Phe Ile Thr Ser Ser |
| 155 | | 160 165 |
| Trp Thr Phe Tyr | Leu Gln Ala Asp Asp | Gly Lys Ile Val Ile Phe |
| 170 | | 175 180 |
| Gln Ser Lys Pro | Glu Ile Gln Tyr Ala | Pro His Leu Glu Gln Glu |
| 185 | | 190 195 |
| Pro Thr Asn Leu | Arg Glu Ser Ser Leu | Ser Lys Met Ser Tyr Leu |
| 200 | | 205 210 |
| Gln Met Arg Asn | Ser Gln Ala His Arg | Asn Phe Leu Glu Asp Gly |
| 215 | | 220 225 |
| Glu Ser Asp Gly | Phe Leu Arg Cys Leu | Ser Leu Asn Ser Gly Trp |
| 230 | | 235 240 |
| Ile Leu Thr Thr | Thr Leu Val Leu Ser | Val Met Val Leu Leu Trp |
| 245 | | 250 255 |
| Ile Cys Cys Ala | Thr Val Ala Thr Ala | Val Glu Gln Tyr Val Pro |
| 260 | | 265 270 |
| Ser Glu Lys Leu | Ser Ile Tyr Gly Asp | Leu Glu Phe Met Asn Glu |
| 275 | | 280 285 |
| Gln Lys Leu Asn | Arg Tyr Pro Ala Ser | Ser Leu Val Val Val Arg |
| 290 | | 295 300 |
| Ser Lys Thr Glu | Asp His Glu Glu Ala | Gly Pro Leu Pro Thr Lys |
| 305 | | 310 315 |
| Val Asn Leu Ala | His Ser Glu Ile | |
| 320 | | |

<210> 331

<211> 350

<212> DNA

<213> Homo sapiens

<400> 331

ttgggtgata cggcgtcttg ccaccgggcc tgtcagttga cctacccctt 50

gcacacctac cctaaggaag aggagttgta cgcattgtcag agagggttgca 100

ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaatacga 150

actaaattgg aatgtgaatc tgcattgtaca gaagcatatt cccaatctga 200
tgagcaatat gcttgccatc ttgggttgcca gaatcagctg ccattcgctg 250
aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300
tttctcttaa ctctggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332
<211> 562
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 47
<223> unknown base

<400> 332
cacactggcc ggatctttta gaggcctttg accttgacca agggctcngga 50
aaacagcaac aagctgagct gctgtgacag aggggaacaag atggcggcgc 100
cgaagggagc ctttgggtga ggaccaact ggggctcccg ccgctgctgc 150
tgctgaccat ggccttgccc ggagggttcgg ggaccgcttc ggctgaagca 200
tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250
gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
agagagggtg caggctgttt tcaatttgtc agtttggtga tgatggaatt 350
gacttaaadc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450
tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
atgcacctac tctttcctct aactctggtg aggtcattct ggagtgcacat 550
gatggactcc gc 562

<210> 333
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 333
acaagctgag ctgctgtgac ag 22

<210> 334
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 334
tgattctggc aaccaagatg gc 22

<210> 335
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 335
atggccttgg ccggagggttc ggggaccgct tcggctgaag 40

<210> 336
<211> 1885
<212> DNA
<213> Homo sapiens

<400> 336
gcgaggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50
cggcccgagg gtggggcgcc gctggggccg gcccgcacgg gcttcatctg 100
agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
gcgacaagct gccggagctg caatgggccg cggtgggga ttcttgtttg 200
gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250
cccccgaga cagcggcaca gaggtgcttc tgccagggtta gtggttactt 300
ggatgattgt acctgtgatg ttgaaaccat tgatagattt aataactaca 350
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
tctgagttag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800

agccacagac aattaaaga cctttaaatc ctttggcttc tgggtcaaggg 850
 acaagtgaag agaacacttt ttacagttgg ctagaagggtc tctgtgtaga 900
 aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950
 tgcatttgag tgcaagatat cttttacaag agacctgggt agaaaagaaa 1000
 tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050
 tgaaggagaa ggtccaagaa ggcttaagaa cttgtathtt ctctacttaa 1100
 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgccagat 1150
 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatgtt 1200
 acttctggaa atacttcatg aaatcaagtc atttcctttg cattttgatg 1250
 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300
 gactttcgac tgcatttttag aaatatttca agaattatgg attgtgttgg 1350
 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400
 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450
 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500
 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550
 tcaggaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700
 aaggagaatt atattgtttt aagtaaacac atttttaaaa attgtgttaa 1750
 gtctatgtat aatactactg tgagtaaaaag taatacttta ataatgtggt 1800
 acaaatttta aagtttaata ttgaataaaa ggaggattat caaattaaaa 1850
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1885

<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Gly | Trp | Gly | Phe | Leu | Phe | Gly | Leu | Leu | Gly | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr |
| | | | | 20 | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Ala | Ala | Gln | Arg | Cys | Phe | Cys | Gln | Val | Ser | Gly | Tyr | Leu | Asp | Asp | | 35 | 40 | 45 |
| Cys | Thr | Cys | Asp | Val | Glu | Thr | Ile | Asp | Arg | Phe | Asn | Asn | Tyr | Arg | | 50 | 55 | 60 |
| Leu | Phe | Pro | Arg | Leu | Gln | Lys | Leu | Leu | Glu | Ser | Asp | Tyr | Phe | Arg | | 65 | 70 | 75 |
| Tyr | Tyr | Lys | Val | Asn | Leu | Lys | Arg | Pro | Cys | Pro | Phe | Trp | Asn | Asp | | 80 | 85 | 90 |
| Ile | Ser | Gln | Cys | Gly | Arg | Arg | Asp | Cys | Ala | Val | Lys | Pro | Cys | Gln | | 95 | 100 | 105 |
| Ser | Asp | Glu | Val | Pro | Asp | Gly | Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Tyr | | 110 | 115 | 120 |
| Ser | Glu | Glu | Ala | Asn | Asn | Leu | Ile | Glu | Glu | Cys | Glu | Gln | Ala | Glu | | 125 | 130 | 135 |
| Arg | Leu | Gly | Ala | Val | Asp | Glu | Ser | Leu | Ser | Glu | Glu | Thr | Gln | Lys | | 140 | 145 | 150 |
| Ala | Val | Leu | Gln | Trp | Thr | Lys | His | Asp | Asp | Ser | Ser | Asp | Asn | Phe | | 155 | 160 | 165 |
| Cys | Glu | Ala | Asp | Asp | Ile | Gln | Ser | Pro | Glu | Ala | Glu | Tyr | Val | Asp | | 170 | 175 | 180 |
| Leu | Leu | Leu | Asn | Pro | Glu | Arg | Tyr | Thr | Gly | Tyr | Lys | Gly | Pro | Asp | | 185 | 190 | 195 |
| Ala | Trp | Lys | Ile | Trp | Asn | Val | Ile | Tyr | Glu | Glu | Asn | Cys | Phe | Lys | | 200 | 205 | 210 |
| Pro | Gln | Thr | Ile | Lys | Arg | Pro | Leu | Asn | Pro | Leu | Ala | Ser | Gly | Gln | | 215 | 220 | 225 |
| Gly | Thr | Ser | Glu | Glu | Asn | Thr | Phe | Tyr | Ser | Trp | Leu | Glu | Gly | Leu | | 230 | 235 | 240 |
| Cys | Val | Glu | Lys | Arg | Ala | Phe | Tyr | Arg | Leu | Ile | Ser | Gly | Leu | His | | 245 | 250 | 255 |
| Ala | Ser | Ile | Asn | Val | His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Glu | | 260 | 265 | 270 |
| Thr | Trp | Leu | Glu | Lys | Lys | Trp | Gly | His | Asn | Ile | Thr | Glu | Phe | Gln | | 275 | 280 | 285 |
| Gln | Arg | Phe | Asp | Gly | Ile | Leu | Thr | Glu | Gly | Glu | Gly | Pro | Arg | Arg | | 290 | 295 | 300 |
| Leu | Lys | Asn | Leu | Tyr | Phe | Leu | Tyr | Leu | Ile | Glu | Leu | Arg | Ala | Leu | | 305 | 310 | 315 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Lys | Val | Leu | Pro | Phe | Phe | Glu | Arg | Pro | Asp | Phe | Gln | Leu | Phe | 320 | 325 | 330 |
| Thr | Gly | Asn | Lys | Ile | Gln | Asp | Glu | Glu | Asn | Lys | Met | Leu | Leu | Leu | 335 | 340 | 345 |
| Glu | Ile | Leu | His | Glu | Ile | Lys | Ser | Phe | Pro | Leu | His | Phe | Asp | Glu | 350 | 355 | 360 |
| Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Lys | Glu | Ala | His | Lys | Leu | Lys | 365 | 370 | 375 |
| Glu | Asp | Phe | Arg | Leu | His | Phe | Arg | Asn | Ile | Ser | Arg | Ile | Met | Asp | 380 | 385 | 390 |
| Cys | Val | Gly | Cys | Phe | Lys | Cys | Arg | Leu | Trp | Gly | Lys | Leu | Gln | Thr | 395 | 400 | 405 |
| Gln | Gly | Leu | Gly | Thr | Ala | Leu | Lys | Ile | Leu | Phe | Ser | Glu | Lys | Leu | 410 | 415 | 420 |
| Ile | Ala | Asn | Met | Pro | Glu | Ser | Gly | Pro | Ser | Tyr | Glu | Phe | His | Leu | 425 | 430 | 435 |
| Thr | Arg | Gln | Glu | Ile | Val | Ser | Leu | Phe | Asn | Ala | Phe | Gly | Arg | Ile | 440 | 445 | 450 |
| Ser | Thr | Ser | Val | Lys | Glu | Leu | Glu | Asn | Phe | Arg | Asn | Leu | Leu | Gln | 455 | 460 | 465 |

Asn Ile His

<210> 338

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 101, 263, 376, 397, 426

<223> unknown base

<400> 338

gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50

ttaaaagacc tttaaattcct ttggcttctg gtcaagggac aagtgaagag 100

nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150

ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200

caagatatct ttacaagag acctgggttag aaaagaaatg gggacacaac 250

attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300

tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350

ctttatccaa agtggtacca ttcttngagc gcccagattt tcaactnttt 400
actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaat 450
acttcatgaa atcaagtcac ttcttttgca ttttgatgag aattcatttt 500
tttgctg 507

<210> 339

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 339

aagctgccgg agctgcaatg 20

<210> 340

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 340

ttgcttctta atcctgagcg c 21

<210> 341

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 341

aaaggaggac tttcgactgc 20

<210> 342

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 342

agagattcat ccaactgctcc aagtcg 26

<210> 343

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 343

tgtccagaaa caggcacata tcagc 25

<210> 344

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 344

agacagcggc acagaggtgc ttctgccagg ttagtggtta cttggatgat 50

<210> 345

<211> 1486

<212> DNA

<213> Homo sapiens

<400> 345

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cactcacctg ttcttgcccc tgggtgttct gacaggtctc tgctccccct 200
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
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gctggtgggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350
tttatcgctg ccctgtaggg ggggccaca atgccccatg tgccaagggc 400
cacttaggtg actaccaact gggaaattca tctcatcctg ctgtgaatat 450
gcacctgggg atgtctctgt tagagacaga tggatgatgg ggattcatgg 500
tgagctaagg agaggggtgg ggcagtgtct ctgaagggtcc ataaaagaaa 550
aaagagaagt gtggttaagg aaaatggtct gtgtggaggg gtcaaggagt 600
taaaaaccct agaaagcaaa aggtaggtaa tgtcaggag tagtcttcat 650
gcctccttca actgggagca tgttctgagg gtgcctccc aagcctggga 700
gtaactattt ccccatccc caggcctgtg cccctctctg gtctcgtgct 750
tgtggcagct ctgtcttcag ttctgggata tgtgccctg tggatgcttc 800
attccagcct cagggaagcc tggcaccac tgccaacgt gagccagagg 850

aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900
gggcaaagcg gtatgatgcc tggcaaaggg cctgcatggc taccctcatt 950
gctacctaata gtgcttgcaa aagctccatg tttcctaaca gattcagact 1000
cctggccagg tgtggtggcc cacacctgta attctagcac tttgggaggc 1050
caaggtgggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100
catggtgaaa ctccatctct actaaaaaaaa aaaaaatata aaaattagct 1150
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aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350
gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400
gcaggaggat tgcttgaggt ctggaggttt gagaccagcc tgggcaacat 1450
agaaagaccc catctctaaa taaatgtttt aaaaat 1486

<210> 346

<211> 124

<212> PRT

<213> Homo sapiens

<400> 346

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Pro | Phe | Val | Thr | His | Leu | Phe | Leu | Pro | Leu | Val | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Thr | Gly | Leu | Cys | Ser | Pro | Phe | Asn | Leu | Asp | Glu | His | His | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Leu | Phe | Pro | Gly | Pro | Pro | Glu | Ala | Glu | Phe | Gly | Tyr | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Gln | His | Val | Gly | Gly | Gly | Gln | Arg | Trp | Met | Leu | Val | Gly | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Trp | Asp | Gly | Pro | Ser | Gly | Asp | Arg | Arg | Gly | Asp | Val | Tyr | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Cys | Pro | Val | Gly | Gly | Ala | His | Asn | Ala | Pro | Cys | Ala | Lys | Gly | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Gly | Asp | Tyr | Gln | Leu | Gly | Asn | Ser | Ser | His | Pro | Ala | Val | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Met | His | Leu | Gly | Met | Ser | Leu | Leu | Glu | Thr | Asp | Gly | Asp | Gly | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

Phe Met Val Ser

<210> 347
<211> 509
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 22
<223> unknown base

<400> 347
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ttgccattgg gagggggcag gatgggaggg aaagtgaaga aaacagaaaa 100
ggagagggac agaggccaga ggacttctca tactggacag aaaccgatca 150
ggcatggaac tccccttcgt cactcacctg ttcttgcccc tgggtgtcct 200
gacaggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250
tcccagggcc accagaagct gaatttggat acagtgtctt acaacatgtt 300
gggggtggac agcgatggat gctggtgggc gccccctggg atgggccttc 350
aggcgaccgg aggggggacg tttatcgctg cctgtaggg gggggccaca 400
atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450
tctcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500
tggtgatgg 509

<210> 348
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 348
agggacagag gccagaggac ttc 23

<210> 349
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 349
caggtgcata ttcacagcag gatg 24

<210> 350
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 350
ggaactcccc ttcgtcactc acctgttctt gcccctgggtg ttcct 45

<210> 351
<211> 2056
<212> DNA
<213> Homo sapiens

<400> 351
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tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200
gctttatttt ggaaagaaac aatgttctag gtcaaactga gtctacaaa 250
tgcagacttt cacaatggtt ctagaagaaa tctggacaag tcttttcatg 300
tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350
tctgcctgcc cctcagaacc tctctgtact ctcaaccaac atgaagcatc 400
tcttgatgtg gagcccagtg atcgcgcctg gagaaacagt gtactattct 450
gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500
ccccagcagc tgggtgtcac tcaactgaagg tctgagtgt gatgtcactg 550
atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600
ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650
ctcaaccatc cttacccgac ctgggatgga gatcaccaaa gatggcttcc 700
acctgggttat tgagctggag gacctggggc ccagtttga gttccttgtg 750
gcctactgga ggaggagacc tgggtgccgag gaacatgtca aaatggtgag 800
gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850
actgtgtgaa ggcccagaca ttcgtgaagg ccattgggag gtacagcgcc 900
ttcagccaga cagaatgtgt ggagggtgcaa ggagaggcca ttcccctggt 950
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 gtggtggtcc tcccagacac cttgaaaata accaattcac cccagaagtt 1100
 aatcagctgc agaagggagg aggtggatgc ctgtgccacg gctgtgatgt 1150
 ctctgagga actcctcagg gcctggatct cataggtttg cggaagggcc 1200
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 cggtcctaag ttttctcctc tgtaattggg gaattacct cacacctgct 1500
 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550
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 tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650
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 caagcccaat gccggtgcag aggggaatgg cttagcgagc tctacagtag 1800
 gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850
 acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900
 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950
 gtaacatgtg catgtttgtt gtgctccttt tttctgttg taaagtacag 2000
 aattcagcaa ataaaaaggg ccaccctggc caaaagcggg aaaaaaaaaa 2050
 aaaaaa 2056

<210> 352

<211> 311

<212> PRT

<213> Homo sapiens

<400> 352

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp |
| | | | 20 | | | | | 25 | | | | | 30 | |

| | | | |
|---|-----|-----|-----|
| Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser | 35 | 40 | 45 |
| Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro | 50 | 55 | 60 |
| Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu | 65 | 70 | 75 |
| Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser | 80 | 85 | 90 |
| Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala | 95 | 100 | 105 |
| Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln | 110 | 115 | 120 |
| Thr Ser Ala Trp Ser Ile Leu Lys His Pro Phe Asn Arg Asn Ser | 125 | 130 | 135 |
| Thr Ile Leu Thr Arg Pro Gly Met Glu Ile Thr Lys Asp Gly Phe | 140 | 145 | 150 |
| His Leu Val Ile Glu Leu Glu Asp Leu Gly Pro Gln Phe Glu Phe | 155 | 160 | 165 |
| Leu Val Ala Tyr Trp Arg Arg Glu Pro Gly Ala Glu Glu His Val | 170 | 175 | 180 |
| Lys Met Val Arg Ser Gly Gly Ile Pro Val His Leu Glu Thr Met | 185 | 190 | 195 |
| Glu Pro Gly Ala Ala Tyr Cys Val Lys Ala Gln Thr Phe Val Lys | 200 | 205 | 210 |
| Ala Ile Gly Arg Tyr Ser Ala Phe Ser Gln Thr Glu Cys Val Glu | 215 | 220 | 225 |
| Val Gln Gly Glu Ala Ile Pro Leu Val Leu Ala Leu Phe Ala Phe | 230 | 235 | 240 |
| Val Gly Phe Met Leu Ile Leu Val Val Val Pro Leu Phe Val Trp | 245 | 250 | 255 |
| Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val | 260 | 265 | 270 |
| Leu Pro Asp Thr Leu Lys Ile Thr Asn Ser Pro Gln Lys Leu Ile | 275 | 280 | 285 |
| Ser Cys Arg Arg Glu Glu Val Asp Ala Cys Ala Thr Ala Val Met | 290 | 295 | 300 |
| Ser Pro Glu Glu Leu Leu Arg Ala Trp Ile Ser | 305 | 310 | |

<210> 353
<211> 864
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 654, 711, 748, 827
<223> unknown base

<400> 353
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tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150
agaatgcttt attttgaaa gaaacaatgt tctaggtcaa actgagtcta 200
ccaaatgcag actttcaca tggttctaga agaaatctgg acaagtcttt 250
tcatgtggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300
gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
attctgtcga ataccagggg gactacgaga gcctgtacac gagccacatc 450
tggatcccca gcagctggtg ctcaactcact gaaggctcctg agtgtgatgt 500
cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
agaaactcaa ccataccttac ccgacctggg atggagatca ccaaagatgg 650
cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700
ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
gaacccttg cgccgctgg ggtatctctc gagaaaagag aggcccaata 800
tgaccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850
ggcgctgggt tgat 864

<210> 354
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 354
aggcttcgct gcgactagac ctc 23

<210> 355
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 355
ccaggtcggg taaggatggt tgag 24

<210> 356
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 356
tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357
<211> 1670
<212> DNA
<213> Homo sapiens

<400> 357
cccacgcgtc cgccacgcg tccgagggac aagagagaag agagactgaa 50
acaggagagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100
ggccgacact gagggagggc gggaggaggt gaagaaggag agaggggaga 150
agaggcagga gctggaaaagg agagagggag gaggaggagg agatgcggga 200
tgggacactg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250
agaggaggtg tgggttagga accaagaggt agccctgtgg gcagcagaag 300
gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350
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aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450
gggaactggg actccctgtg gggaggagag gaaagctgga agtcctggag 500
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gcgttgggca ggggtccctc ggaggcctcc tggggatggg ggctgcagct 600
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ataatctcca gggaaacttc gtgccagggc ctctttctg gggcctggtg 750
 aatgcagcgt ggagtctgtg tgctgtgggg aagcggcaga gccccgtgga 800
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 tcagcactgg aggagagaag ctccggggaa ccttgtaaa caccggccga 900
 catgtctcct tcctgcctgc accccgacct gtggtcaatg tgtctggagg 950
 tccccctcct tacagccacc gactcagtga actgaggctg ctgtttggag 1000
 ctgcgcacgg agccggctcg gaacatcaga tcaaccacca gggcttctct 1050
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 gctctctcag caccgcccc tgctccgaga ctgtcacctg gatcctcatt 1350
 gaccggggccc tcaatatcac ctcccttcag atgcactccc tgagactcct 1400
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 ggcccctgca gcccttgccc cacagggcac tgaggggcaa cagggacccc 1500
 cggcaccgag agaggcgtg ccgaggcccc aactaccgcc tgcattgtga 1550
 tgggtgtccc catggctcgt gagactcccc ttcgaggatt gcaccgccc 1600
 gtcctaagcc tccccacaag gcgaggggag ttaccctaa aacaaagcta 1650
 ttaaagggac agaatactta 1670

<210> 358
 <211> 328
 <212> PRT
 <213> Homo sapiens

<400> 358
 Met Gly Ala Ala Ala Arg Leu Ser Ala Pro Arg Ala Leu Val Leu
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 Trp Ala Ala Leu Gly Ala Ala Ala His Ile Gly Pro Ala Pro Asp
 20 25 30
 Pro Glu Asp Trp Trp Ser Tyr Lys Asp Asn Leu Gln Gly Asn Phe
 35 40 45
 Val Pro Gly Pro Pro Phe Trp Gly Leu Val Asn Ala Ala Trp Ser
 50 55 60

| | | | |
|---|-----|-----|-----|
| Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu | 65 | 70 | 75 |
| Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser | 80 | 85 | 90 |
| Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg | 95 | 100 | 105 |
| His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser | 110 | 115 | 120 |
| Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu | 125 | 130 | 135 |
| Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn | 140 | 145 | 150 |
| His Gln Gly Phe Ser Ala Glu Val Gln Leu Ile His Phe Asn Gln | 155 | 160 | 165 |
| Glu Leu Tyr Gly Asn Phe Ser Ala Ala Ser Arg Gly Pro Asn Gly | 170 | 175 | 180 |
| Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn | 185 | 190 | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile | 200 | 205 | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu | 215 | 220 | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser | 230 | 235 | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile | 245 | 250 | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg | 260 | 265 | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser | 275 | 280 | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg | 290 | 295 | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro | 305 | 310 | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg | 320 | 325 | |

<210> 359

<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 359
tctgctgagg tgcagctcat tcac 24

<210> 360
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 360
gaggctctgg aagatctgag atgg 24

<210> 361
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 361
gcctctttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50

<210> 362
<211> 3038
<212> DNA
<213> Homo sapiens

<400> 362
ggcgccctggt tctgcgcgta ctggctgtac ggagcaggag caagaggtcg 50
ccgccagcct ccgccgccga gcctcggttcg tgtccccgcc cctcgctcct 100
gcagctactg ctcagaaacg ctggggcgcc caccctggca gactaacgaa 150
gcagctccct tcccaccca actgcaggtc taattttgga cgctttgcct 200
gccatttctt ccaggttgag ggagccgcag aggcggaggc tcgcgtattc 250
ctgcagtcag caccacgtc gcccccgac gctcggtgct caggcccttc 300
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aaccacagtg ctgttcatgg ctagagcaat tccagccatg gtggttccca 550
atgccacttt attggagaaa cttttggaaa aatacatgga tgaggatggt 600
gagtgggtgga tagccaaaca acgagggaaa agggccatca cagacaatga 650
catgcagagt attttggacc ttcataataa attacgaagt caggtgtatc 700
caacagcctc taatatggag tatatgacat gggatgtaga gctggaaaga 750
tctgcagaat cctgggctga aagttgcttg tgggaacatg gacctgcaag 800
cttgcttcca tcaattggac agaatttggg agcacactgg ggaagatata 850
ggccccgcac gtttcatgta caatcgtggt atgatgaagt gaaagacttt 900
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tggccctgta tgtacacatt atacacaggt cgtgtgggca actagtaaca 1000
gaatcggttg tgccattaat ttgtgtcata acatgaacat ctgggggcag 1050
atatggccca aagctgtcta cctggtgtgc aattactccc caaagggaaa 1100
ctggtggggc catgcccctt acaaacatgg gcggccctgt tctgcttgcc 1150
cacctagttt tggagggggc tgtagagaaa atctgtgcta caaagaagg 1200
tcagacaggt attatcccc tcgagaagag gaaacaaatg aaatagaacg 1250
acagcagtca caagtccatg acacccatgt ccggacaaga tcagatgata 1300
gtagcagaaa tgaagtcata agcgcacagc aaatgtcca aattgtttct 1350
tgtgaagtaa gattaagaga tcagtgcata ggaacaacct gcaataggta 1400
cgaatgtcct gctggctgtt tggatagtaa agctaaagtt attggcagt 1450
tacattatga aatgcaatcc agcatctgta gagctgcaat tcattatggt 1500
ataatagaca atgatggtg ctgggtagat atcactagac aaggaagaaa 1550
gcattatttc atcaagtcca atagaaatgg tattcaaaca attggcaa 1600
atcagtctgc taattccttc acagtctcta aagtaacagt tcaggctgtg 1650
acttgtgaaa caactgtgga acagctctgt ccatttcata agcctgcttc 1700
acattgcccc agagtatact gtcctcgtaa ctgtatgcaa gcaatccac 1750
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tgcagagcag cagtacatgc tggagtgggt cgaaatcacg gtggttatgt 1850
tgatgtaatg cctgtggaca aaagaaagac ctacattgct tcttttcaga 1900
atggaatcct ctcagaaagt ttacagaatc ctccaggagg aaaggcattc 1950

agagtgtttg ctgttgtgtg aaactgaata cttggaagag gaccataaag 2000
 actattccaa atgcaatatt tctgaatttt gtataaaaact gtaacattac 2050
 tgtacagagt acatcaacta ttttcagccc aaaaagggtgc caaatgcata 2100
 taaatcttga taaacaaagt ctataaaaata aaacatggga cattagcttt 2150
 gggaaaagta atgaaaatat aatgggtttta gaaatcctgt gttaaattatt 2200
 gctatatattt cttagcagtt atttctacag ttaattacat agtcatgatt 2250
 gttctacgtt tcatatatta tatgggtgctt tgtatatgcc actaataaaaa 2300
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 aaattctgat attgcacttc ttattttata taaaataatc ctttaatatc 2550
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 aatgtaataa agtcagagtg gtggtatgaa aacattccta gtgatcatgt 2650
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 attaccattg ccactgattt tttttaaatg gttaaagacc ttgtatataa 2850
 atattgccat atcatgggtac ctataatggt gatatatattg tttctatgaa 2900
 aaatgtattg tgctttgata ctaaaaatct gtaaaatggt agttttggta 2950
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<210> 363

<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Cys | Thr | Ala | Arg | Glu | Trp | Leu | Arg | Val | Thr | Thr | Val | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Met | Ala | Arg | Ala | Ile | Pro | Ala | Met | Val | Val | Pro | Asn | Ala | Thr |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu | | 35 | 40 | 45 |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn | | 50 | 55 | 60 |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln | | 65 | 70 | 75 |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val | | 80 | 85 | 90 |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp | | 95 | 100 | 105 |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu | | 110 | 115 | 120 |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln | | 125 | 130 | 135 |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His | | 140 | 145 | 150 |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys | | 155 | 160 | 165 |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly | | 170 | 175 | 180 |
| Cys | Ala | Ile | Asn | Leu | Cys | His | Asn | Met | Asn | Ile | Trp | Gly | Gln | Ile | | 185 | 190 | 195 |
| Trp | Pro | Lys | Ala | Val | Tyr | Leu | Val | Cys | Asn | Tyr | Ser | Pro | Lys | Gly | | 200 | 205 | 210 |
| Asn | Trp | Trp | Gly | His | Ala | Pro | Tyr | Lys | His | Gly | Arg | Pro | Cys | Ser | | 215 | 220 | 225 |
| Ala | Cys | Pro | Pro | Ser | Phe | Gly | Gly | Gly | Cys | Arg | Glu | Asn | Leu | Cys | | 230 | 235 | 240 |
| Tyr | Lys | Glu | Gly | Ser | Asp | Arg | Tyr | Tyr | Pro | Pro | Arg | Glu | Glu | Glu | | 245 | 250 | 255 |
| Thr | Asn | Glu | Ile | Glu | Arg | Gln | Gln | Ser | Gln | Val | His | Asp | Thr | His | | 260 | 265 | 270 |
| Val | Arg | Thr | Arg | Ser | Asp | Asp | Ser | Ser | Arg | Asn | Glu | Val | Ile | Ser | | 275 | 280 | 285 |
| Ala | Gln | Gln | Met | Ser | Gln | Ile | Val | Ser | Cys | Glu | Val | Arg | Leu | Arg | | 290 | 295 | 300 |
| Asp | Gln | Cys | Lys | Gly | Thr | Thr | Cys | Asn | Arg | Tyr | Glu | Cys | Pro | Ala | | 305 | 310 | 315 |

| | | | |
|---|-----|-----|-----|
| Gly Cys Leu Asp Ser Lys Ala Lys Val Ile Gly Ser Val His Tyr | 320 | 325 | 330 |
| Glu Met Gln Ser Ser Ile Cys Arg Ala Ala Ile His Tyr Gly Ile | 335 | 340 | 345 |
| Ile Asp Asn Asp Gly Gly Trp Val Asp Ile Thr Arg Gln Gly Arg | 350 | 355 | 360 |
| Lys His Tyr Phe Ile Lys Ser Asn Arg Asn Gly Ile Gln Thr Ile | 365 | 370 | 375 |
| Gly Lys Tyr Gln Ser Ala Asn Ser Phe Thr Val Ser Lys Val Thr | 380 | 385 | 390 |
| Val Gln Ala Val Thr Cys Glu Thr Thr Val Glu Gln Leu Cys Pro | 395 | 400 | 405 |
| Phe His Lys Pro Ala Ser His Cys Pro Arg Val Tyr Cys Pro Arg | 410 | 415 | 420 |
| Asn Cys Met Gln Ala Asn Pro His Tyr Ala Arg Val Ile Gly Thr | 425 | 430 | 435 |
| Arg Val Tyr Ser Asp Leu Ser Ser Ile Cys Arg Ala Ala Val His | 440 | 445 | 450 |
| Ala Gly Val Val Arg Asn His Gly Gly Tyr Val Asp Val Met Pro | 455 | 460 | 465 |
| Val Asp Lys Arg Lys Thr Tyr Ile Ala Ser Phe Gln Asn Gly Ile | 470 | 475 | 480 |
| Phe Ser Glu Ser Leu Gln Asn Pro Pro Gly Gly Lys Ala Phe Arg | 485 | 490 | 495 |
| Val Phe Ala Val Val | 500 | | |

<210> 364

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 364

ggacagaatt tgggagcaca ctgg 24

<210> 365

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 365
ccaagagtat actgtcctcg 20

<210> 366
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 366
agcacagatt ttctctacag ccccc 25

<210> 367
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 367
aaccactcca gcatgtactg ctgc 24

<210> 368
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 368
ccattcaggt gttctggccc tgtatgtaca cattatacac aggtcgtgtg 50

<210> 369
<211> 1685
<212> DNA
<213> Homo sapiens

<400> 369
gcggagacaa gcgcagagcg cagcgcacgg ccacagacag ccctgggcat 50
ccaccgacgg cgcagccgga gccagcagag ccggaaggcg cgccccgggc 100
agagaaagcc gagcagagct ggggtggcgtc tccgggcccgc cgctccgacg 150
ggccagcgcc ctcccatgt ccctgctccc acgcccgcgc cctccggta 200
gcatgaggct cctggcggcc gcgctgctcc tgctgctgct ggcgctgtac 250
accgcgcgtg tggacgggtc caaatgcaag tgctcccga agggacccaa 300
gatccgctac agcgacgtga agaagctgga aatgaagcca aagtaccgc 350

actgcgagga gaagatggtt atcatcacca ccaagagcgt gtccaggtac 400
cgaggtcagg agcactgcct gcaccccaag ctgcagagca ccaagcgctt 450
catcaagtgg tacaacgcct ggaacgagaa gcgcagggtc tacgaagaat 500
agggtgaaaa acctcagaag ggaaaactcc aaaccagttg ggagacttgt 550
gcaaaggact ttgcagatta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 600
aaaaaaaaaa aaagcctttc tttctcacag gcataagaca caaattatat 650
attgttatga agcacttttt accaacggtc agtttttaca ttttatagct 700
gcgtgcgaaa ggcttcaga tgggagaccc atctctcttg tgctccagac 750
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<210> 370

<211> 111

<212> PRT

<213> Homo sapiens

<400> 370

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ser | Leu | Leu | Pro | Arg | Arg | Ala | Pro | Pro | Val | Ser | Met | Arg | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Leu | Ala | Ala | Ala | Leu | Leu | Leu | Leu | Leu | Leu | Ala | Leu | Tyr | Thr | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Arg | Val | Asp | Gly | Ser | Lys | Cys | Lys | Cys | Ser | Arg | Lys | Gly | Pro | Lys | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ile | Arg | Tyr | Ser | Asp | Val | Lys | Lys | Leu | Glu | Met | Lys | Pro | Lys | Tyr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Pro | His | Cys | Glu | Glu | Lys | Met | Val | Ile | Ile | Thr | Thr | Lys | Ser | Val | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Arg | Tyr | Arg | Gly | Gln | Glu | His | Cys | Leu | His | Pro | Lys | Leu | Gln | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Thr | Lys | Arg | Phe | Ile | Lys | Trp | Tyr | Asn | Ala | Trp | Asn | Glu | Lys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Arg | Val | Tyr | Glu | Glu | | | | | | | | | | |
| | | | | 110 | | | | | | | | | | | |

<210> 371

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 371

cagcgccctc cccatgtccc tg 22

<210> 372

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 372

tcccaactgg tttggagttt tccc 24

<210> 373

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 373
ctccgggtcag catgaggctc ctggcggccg ctgctcctgc tgctg 45

<210> 374
<211> 3113
<212> DNA
<213> Homo sapiens

<400> 374
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accctcattg acagccaagc acagtatcca gttgtcaaca caaattatgg 150
caaaatccgg ggcctaagaa caccgttacc caatgagatc ttgggtccag 200
tggagcagta cttaggggtc ccctatgcct cccccccac tggagagagg 250
cggtttcagc cccagaacc cccgtcctcc tggactggca tccgaaatac 300
tactcagttt gctgctgtgt gccccagca cctggatgag agatccttac 350
tgcatgacat gctgcccac tggtttaccg ccaatttgga tactttgatg 400
acctatgttc aagatcaaaa tgaagactgc ctttacttaa acatctacgt 450
gcccacggaa gatggagcca acacaaagaa aaacgcagat gatataacga 500
gtaatgaccg tggatgaagac gaagatattc atgatcagaa cagtaagaag 550
cccgtcatgg tctatatcca tgggggatct tacatggagg gcaccggcaa 600
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gcagcaaaaag gcaactatgg gtcctggat cagattcaag cactgcggtg 750
gattgaggag aatgtgggag cctttggcgg ggacccaag agagtgacca 800
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<210> 375
 <211> 816
 <212> PRT
 <213> Homo sapiens

<400> 375
 Met Leu Asn Ser Asn Val Leu Leu Trp Leu Thr Ala Leu Ala Ile
 1 5 10 15
 Lys Phe Thr Leu Ile Asp Ser Gln Ala Gln Tyr Pro Val Val Asn
 20 25 30
 Thr Asn Tyr Gly Lys Ile Arg Gly Leu Arg Thr Pro Leu Pro Asn
 35 40 45
 Glu Ile Leu Gly Pro Val Glu Gln Tyr Leu Gly Val Pro Tyr Ala
 50 55 60
 Ser Pro Pro Thr Gly Glu Arg Arg Phe Gln Pro Pro Glu Pro Pro
 65 70 75
 Ser Ser Trp Thr Gly Ile Arg Asn Thr Thr Gln Phe Ala Ala Val
 80 85 90
 Cys Pro Gln His Leu Asp Glu Arg Ser Leu Leu His Asp Met Leu
 95 100 105
 Pro Ile Trp Phe Thr Ala Asn Leu Asp Thr Leu Met Thr Tyr Val
 110 115 120
 Gln Asp Gln Asn Glu Asp Cys Leu Tyr Leu Asn Ile Tyr Val Pro
 125 130 135
 Thr Glu Asp Gly Ala Asn Thr Lys Lys Asn Ala Asp Asp Ile Thr
 140 145 150

| | | | |
|---|-----|-----|-----|
| Ser Asn Asp Arg Gly Glu Asp Glu Asp Ile His Asp Gln Asn Ser | 155 | 160 | 165 |
| Lys Lys Pro Val Met Val Tyr Ile His Gly Gly Ser Tyr Met Glu | 170 | 175 | 180 |
| Gly Thr Gly Asn Met Ile Asp Gly Ser Ile Leu Ala Ser Tyr Gly | 185 | 190 | 195 |
| Asn Val Ile Val Ile Thr Ile Asn Tyr Arg Leu Gly Ile Leu Gly | 200 | 205 | 210 |
| Phe Leu Ser Thr Gly Asp Gln Ala Ala Lys Gly Asn Tyr Gly Leu | 215 | 220 | 225 |
| Leu Asp Gln Ile Gln Ala Leu Arg Trp Ile Glu Glu Asn Val Gly | 230 | 235 | 240 |
| Ala Phe Gly Gly Asp Pro Lys Arg Val Thr Ile Phe Gly Ser Gly | 245 | 250 | 255 |
| Ala Gly Ala Ser Cys Val Ser Leu Leu Thr Leu Ser His Tyr Ser | 260 | 265 | 270 |
| Glu Gly Leu Phe Gln Lys Ala Ile Ile Gln Ser Gly Thr Ala Leu | 275 | 280 | 285 |
| Ser Ser Trp Ala Val Asn Tyr Gln Pro Ala Lys Tyr Thr Arg Ile | 290 | 295 | 300 |
| Leu Ala Asp Lys Val Gly Cys Asn Met Leu Asp Thr Thr Asp Met | 305 | 310 | 315 |
| Val Glu Cys Leu Arg Asn Lys Asn Tyr Lys Glu Leu Ile Gln Gln | 320 | 325 | 330 |
| Thr Ile Thr Pro Ala Thr Tyr His Ile Ala Phe Gly Pro Val Ile | 335 | 340 | 345 |
| Asp Gly Asp Val Ile Pro Asp Asp Pro Gln Ile Leu Met Glu Gln | 350 | 355 | 360 |
| Gly Glu Phe Leu Asn Tyr Asp Ile Met Leu Gly Val Asn Gln Gly | 365 | 370 | 375 |
| Glu Gly Leu Lys Phe Val Asp Gly Ile Val Asp Asn Glu Asp Gly | 380 | 385 | 390 |
| Val Thr Pro Asn Asp Phe Asp Phe Ser Val Ser Asn Phe Val Asp | 395 | 400 | 405 |
| Asn Leu Tyr Gly Tyr Pro Glu Gly Lys Asp Thr Leu Arg Glu Thr | 410 | 415 | 420 |
| Ile Lys Phe Met Tyr Thr Asp Trp Ala Asp Lys Glu Asn Pro Glu | 425 | 430 | 435 |

| | | | |
|---|-----|-----|-----|
| Thr Arg Arg Lys Thr Leu Val Ala Leu Phe Thr Asp His Gln Trp | 440 | 445 | 450 |
| Val Ala Pro Ala Val Ala Ala Asp Leu His Ala Gln Tyr Gly Ser | 455 | 460 | 465 |
| Pro Thr Tyr Phe Tyr Ala Phe Tyr His His Cys Gln Ser Glu Met | 470 | 475 | 480 |
| Lys Pro Ser Trp Ala Asp Ser Ala His Gly Asp Glu Val Pro Tyr | 485 | 490 | 495 |
| Val Phe Gly Ile Pro Met Ile Gly Pro Thr Glu Leu Phe Ser Cys | 500 | 505 | 510 |
| Asn Phe Ser Lys Asn Asp Val Met Leu Ser Ala Val Val Met Thr | 515 | 520 | 525 |
| Tyr Trp Thr Asn Phe Ala Lys Thr Gly Asp Pro Asn Gln Pro Val | 530 | 535 | 540 |
| Pro Gln Asp Thr Lys Phe Ile His Thr Lys Pro Asn Arg Phe Glu | 545 | 550 | 555 |
| Glu Val Ala Trp Ser Lys Tyr Asn Pro Lys Asp Gln Leu Tyr Leu | 560 | 565 | 570 |
| His Ile Gly Leu Lys Pro Arg Val Arg Asp His Tyr Arg Ala Thr | 575 | 580 | 585 |
| Lys Val Ala Phe Trp Leu Glu Leu Val Pro His Leu His Asn Leu | 590 | 595 | 600 |
| Asn Glu Ile Phe Gln Tyr Val Ser Thr Thr Thr Lys Val Pro Pro | 605 | 610 | 615 |
| Pro Asp Met Thr Ser Phe Pro Tyr Gly Thr Arg Arg Ser Pro Ala | 620 | 625 | 630 |
| Lys Ile Trp Pro Thr Thr Lys Arg Pro Ala Ile Thr Pro Ala Asn | 635 | 640 | 645 |
| Asn Pro Lys His Ser Lys Asp Pro His Lys Thr Gly Pro Glu Asp | 650 | 655 | 660 |
| Thr Thr Val Leu Ile Glu Thr Lys Arg Asp Tyr Ser Thr Glu Leu | 665 | 670 | 675 |
| Ser Val Thr Ile Ala Val Gly Ala Ser Leu Leu Phe Leu Asn Ile | 680 | 685 | 690 |
| Leu Ala Phe Ala Ala Leu Tyr Tyr Lys Lys Asp Lys Arg Arg His | 695 | 700 | 705 |
| Glu Thr His Arg Arg Pro Ser Pro Gln Arg Asn Thr Thr Asn Asp | 710 | 715 | 720 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | His | Ile | Gln | Asn | Glu | Glu | Ile | Met | Ser | Leu | Gln | Met | Lys |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Gln | Leu | Glu | His | Asp | His | Glu | Cys | Glu | Ser | Leu | Gln | Ala | His | Asp |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Thr | Leu | Arg | Leu | Thr | Cys | Pro | Pro | Asp | Tyr | Thr | Leu | Thr | Leu | Arg |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Arg | Ser | Pro | Asp | Asp | Ile | Pro | Leu | Met | Thr | Pro | Asn | Thr | Ile | Thr |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Met | Ile | Pro | Asn | Thr | Leu | Thr | Gly | Met | Gln | Pro | Leu | His | Thr | Phe |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Asn | Thr | Phe | Ser | Gly | Gly | Gln | Asn | Ser | Thr | Asn | Leu | Pro | His | Gly |
| | | | | 800 | | | | | 805 | | | | | 810 |
| His | Ser | Thr | Thr | Arg | Val | | | | | | | | | |
| | | | | 815 | | | | | | | | | | |

<210> 376

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 376

ggcaagctac ggaaacgtca tcgtg 25

<210> 377

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 377

aacccccgag ccaaaagatg gtcac 25

<210> 378

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 378

gtaccggtga ccaggcagca aaaggcaact atgggctcct ggatcag 47

<210> 379

<211> 2461

<212> DNA

<213> Homo sapiens

<400> 379

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<211> 348

<212> PRT

<213> Homo sapiens

<400> 380

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Leu | Ser | Ala | Arg | Asp | Gly | Ser | Arg | Met | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Leu | Leu | Leu | Gly | Ser | Gly | Gln | Gly | Pro | Gln | Gln | Val | Gly | Ala | Gly | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | |
| Gln | Thr | Phe | Glu | Tyr | Leu | Lys | Arg | Glu | His | Ser | Leu | Ser | Lys | Pro | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | |
| Tyr | Gln | Gly | Val | Gly | Thr | Gly | Ser | Ser | Ser | Leu | Trp | Asn | Leu | Met | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | |
| Gly | Asn | Ala | Met | Val | Met | Thr | Gln | Tyr | Ile | Arg | Leu | Thr | Pro | Asp | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | |
| Met | Gln | Ser | Lys | Gln | Gly | Ala | Leu | Trp | Asn | Arg | Val | Pro | Cys | Phe | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | |
| Leu | Arg | Asp | Trp | Glu | Leu | Gln | Val | His | Phe | Lys | Ile | His | Gly | Gln | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | |
| Gly | Lys | Lys | Asn | Leu | His | Gly | Asp | Gly | Leu | Ala | Ile | Trp | Tyr | Thr | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | |
| Lys | Asp | Arg | Met | Gln | Pro | Gly | Pro | Val | Phe | Gly | Asn | Met | Asp | Lys | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | |
| Phe | Val | Gly | Leu | Gly | Val | Phe | Val | Asp | Thr | Tyr | Pro | Asn | Glu | Glu | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | |
| Lys | Gln | Gln | Glu | Arg | Val | Phe | Pro | Tyr | Ile | Ser | Ala | Met | Val | Asn | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | |
| Asn | Gly | Ser | Leu | Ser | Tyr | Asp | His | Glu | Arg | Asp | Gly | Arg | Pro | Thr | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | |
| Glu | Leu | Gly | Gly | Cys | Thr | Ala | Ile | Val | Arg | Asn | Leu | His | Tyr | Asp | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | |
| Thr | Phe | Leu | Val | Ile | Arg | Tyr | Val | Lys | Arg | His | Leu | Thr | Ile | Met | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | |
| Met | Asp | Ile | Asp | Gly | Lys | His | Glu | Trp | Arg | Asp | Cys | Ile | Glu | Val | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | |
| Pro | Gly | Val | Arg | Leu | Pro | Arg | Gly | Tyr | Tyr | Phe | Gly | Thr | Ser | Ser | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Ile | Thr | Gly | Asp | Leu | Ser | Asp | Asn | His | Asp | Val | Ile | Ser | Leu | Lys | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | |
| Leu | Phe | Glu | Leu | Thr | Val | Glu | Arg | Thr | Pro | Glu | Glu | Glu | Lys | Leu | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | |
| His | Arg | Asp | Val | Phe | Leu | Pro | Ser | Val | Asp | Asn | Met | Lys | Leu | Pro | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | |
| Glu | Met | Thr | Ala | Pro | Leu | Pro | Pro | Leu | Ser | Gly | Leu | Ala | Leu | Phe | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | |

Leu Ile Val Phe Phe Ser Leu Val Phe Ser Val Phe Ala Ile Val
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Arg Phe Tyr

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<223> Synthetic oligonucleotide probe

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<210> 383
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<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

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Pro Val Ser Thr Pro Lys Asn Gly Met Ser Ser Lys Ser Arg Lys
35 40 45

Arg Ile Met Pro Asp Pro Val Thr Glu Pro Pro Val Thr Asp Pro
50 55 60

Val Tyr Glu Ala Leu Leu Tyr Cys Asn Ile Pro Ser Val Ala Glu
65 70 75

Arg Ser Met Glu Gly His Ala Pro His His Phe Lys Leu Val Ser
80 85 90

Val His Val Phe Ile Arg His Gly Asp Arg Tyr Pro Leu Tyr Val
95 100 105

Ile Pro Lys Thr Lys Arg Pro Glu Ile Asp Cys Thr Leu Val Ala
110 115 120

Asn Arg Lys Pro Tyr His Pro Lys Leu Glu Ala Phe Ile Ser His
125 130 135

Met Ser Lys Gly Ser Gly Ala Ser Phe Glu Ser Pro Leu Asn Ser
140 145 150

Leu Pro Leu Tyr Pro Asn His Pro Leu Cys Glu Met Gly Glu Leu
155 160 165

Thr Gln Thr Gly Val Val Gln His Leu Gln Asn Gly Gln Leu Leu
170 175 180

Arg Asp Ile Tyr Leu Lys Lys His Lys Leu Leu Pro Asn Asp Trp
185 190 195

Ser Ala Asp Gln Leu Tyr Leu Glu Thr Thr Gly Lys Ser Arg Thr
200 205 210

Leu Gln Ser Gly Leu Ala Leu Leu Tyr Gly Phe Leu Pro Asp Phe
215 220 225

Asp Trp Lys Lys Ile Tyr Phe Arg His Gln Pro Ser Ala Leu Phe
230 235 240

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| Cys Ser Gly Ser Cys Tyr Cys Pro Val Arg Asn Gln Tyr Leu Glu | 245 | 250 | 255 |
| Lys Glu Gln Arg Arg Gln Tyr Leu Leu Arg Leu Lys Asn Ser Gln | 260 | 265 | 270 |
| Leu Glu Lys Thr Tyr Gly Glu Met Ala Lys Ile Val Asp Val Pro | 275 | 280 | 285 |
| Thr Lys Gln Leu Arg Ala Ala Asn Pro Ile Asp Ser Met Leu Cys | 290 | 295 | 300 |
| His Phe Cys His Asn Val Ser Phe Pro Cys Thr Arg Asn Gly Cys | 305 | 310 | 315 |
| Val Asp Met Glu His Phe Lys Val Ile Lys Thr His Gln Ile Glu | 320 | 325 | 330 |
| Asp Glu Arg Glu Arg Arg Glu Lys Lys Leu Tyr Phe Gly Tyr Ser | 335 | 340 | 345 |
| Leu Leu Gly Ala His Pro Ile Leu Asn Gln Thr Ile Gly Arg Met | 350 | 355 | 360 |
| Gln Arg Ala Thr Glu Gly Arg Lys Glu Glu Leu Phe Ala Leu Tyr | 365 | 370 | 375 |
| Ser Ala His Asp Val Thr Leu Ser Pro Val Leu Ser Ala Leu Gly | 380 | 385 | 390 |
| Leu Ser Glu Ala Arg Phe Pro Arg Phe Ala Ala Arg Leu Ile Phe | 395 | 400 | 405 |
| Glu Leu Trp Gln Asp Arg Glu Lys Pro Ser Glu His Ser Val Arg | 410 | 415 | 420 |
| Ile Leu Tyr Asn Gly Val Asp Val Thr Phe His Thr Ser Phe Cys | 425 | 430 | 435 |
| Gln Asp His His Lys Arg Ser Pro Lys Pro Met Cys Pro Leu Glu | 440 | 445 | 450 |
| Asn Leu Val Arg Phe Val Lys Arg Asp Met Phe Val Ala Leu Gly | 455 | 460 | 465 |
| Gly Ser Gly Thr Asn Tyr Tyr Asp Ala Cys His Arg Glu Gly Phe | 470 | 475 | 480 |

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<210> 387

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 387

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<400> 388

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<210> 389

<211> 3313

<212> DNA

<213> Homo sapiens

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 aagccaccta ctgtctgcct atctatctat ctatctatct atctatctat 3000
 ctatctatct atctatctat tactttcttg tacagacggg agtctcacgc 3050
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 aaaaatacaa aattagccgg gcgtgggtgt gcatgtctgt aatcccagct 3200
 acttgggagg ctgagtcagg agaattgctt taacctggga ggtggaggtt 3250
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 aaactctatc tca 3313

<210> 390
 <211> 916
 <212> PRT
 <213> Homo sapiens

<400> 390

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|----|
| Met | Ile | Pro | Ala | Arg | Leu | His | Arg | Asp | Tyr | Lys | Gly | Leu | Val | Leu | | 1 | 5 | 10 | 15 |
| Leu | Gly | Ile | Leu | Leu | Gly | Thr | Leu | Trp | Glu | Thr | Gly | Cys | Thr | Gln | | 20 | 25 | 30 | |
| Ile | Arg | Tyr | Ser | Val | Pro | Glu | Glu | Leu | Glu | Lys | Gly | Ser | Arg | Val | | 35 | 40 | 45 | |
| Gly | Asp | Ile | Ser | Arg | Asp | Leu | Gly | Leu | Glu | Pro | Arg | Glu | Leu | Ala | | 50 | 55 | 60 | |
| Glu | Arg | Gly | Val | Arg | Ile | Ile | Pro | Arg | Gly | Arg | Thr | Gln | Leu | Phe | | 65 | 70 | 75 | |
| Ala | Leu | Asn | Pro | Arg | Ser | Gly | Ser | Leu | Val | Thr | Ala | Gly | Arg | Ile | | 80 | 85 | 90 | |
| Asp | Arg | Glu | Glu | Leu | Cys | Met | Gly | Ala | Ile | Lys | Cys | Gln | Leu | Asn | | 95 | 100 | 105 | |
| Leu | Asp | Ile | Leu | Met | Glu | Asp | Lys | Val | Lys | Ile | Tyr | Gly | Val | Glu | | 110 | 115 | 120 | |
| Val | Glu | Val | Arg | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Tyr | Phe | Arg | Glu | | 125 | 130 | 135 | |
| Ser | Glu | Leu | Glu | Ile | Lys | Ile | Ser | Glu | Asn | Ala | Ala | Thr | Glu | Met | | 140 | 145 | 150 | |
| Arg | Phe | Pro | Leu | Pro | His | Ala | Trp | Asp | Pro | Asp | Ile | Gly | Lys | Asn | | 155 | 160 | 165 | |
| Ser | Leu | Gln | Ser | Tyr | Glu | Leu | Ser | Pro | Asn | Thr | His | Phe | Ser | Leu | | 170 | 175 | 180 | |
| Ile | Val | Gln | Asn | Gly | Ala | Asp | Gly | Ser | Lys | Tyr | Pro | Glu | Leu | Val | | 185 | 190 | 195 | |
| Leu | Lys | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Lys | Ala | Ala | His | His | Leu | | 200 | 205 | 210 | |
| Val | Leu | Thr | Ala | Ser | Asp | Gly | Gly | Asp | Pro | Val | Arg | Thr | Gly | Thr | | 215 | 220 | 225 | |
| Ala | Arg | Ile | Arg | Val | Met | Val | Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | | 230 | 235 | 240 | |
| Ala | Phe | Ala | Gln | Pro | Glu | Tyr | Arg | Ala | Ser | Val | Pro | Glu | Asn | Leu | | 245 | 250 | 255 | |
| Ala | Leu | Gly | Thr | Gln | Leu | Leu | Val | Val | Asn | Ala | Thr | Asp | Pro | Asp | | 260 | 265 | 270 | |
| Glu | Gly | Val | Asn | Ala | Glu | Val | Arg | Tyr | Ser | Phe | Arg | Tyr | Val | Asp | | 275 | 280 | 285 | |

| | | | |
|---|-----|-----|-----|
| Asp Lys Ala Ala Gln Val Phe Lys Leu Asp Cys Asn Ser Gly Thr | 290 | 295 | 300 |
| Ile Ser Thr Ile Gly Glu Leu Asp His Glu Glu Ser Gly Phe Tyr | 305 | 310 | 315 |
| Gln Met Glu Val Gln Ala Met Asp Asn Ala Gly Tyr Ser Ala Arg | 320 | 325 | 330 |
| Ala Lys Val Leu Ile Thr Val Leu Asp Val Asn Asp Asn Ala Pro | 335 | 340 | 345 |
| Glu Val Val Leu Thr Ser Leu Ala Ser Ser Val Pro Glu Asn Ser | 350 | 355 | 360 |
| Pro Arg Gly Thr Leu Ile Ala Leu Leu Asn Val Asn Asp Gln Asp | 365 | 370 | 375 |
| Ser Glu Glu Asn Gly Gln Val Ile Cys Phe Ile Gln Gly Asn Leu | 380 | 385 | 390 |
| Pro Phe Lys Leu Glu Lys Ser Tyr Gly Asn Tyr Tyr Ser Leu Val | 395 | 400 | 405 |
| Thr Asp Ile Val Leu Asp Arg Glu Gln Val Pro Ser Tyr Asn Ile | 410 | 415 | 420 |
| Thr Val Thr Ala Thr Asp Arg Gly Thr Pro Pro Leu Ser Thr Glu | 425 | 430 | 435 |
| Thr His Ile Ser Leu Asn Val Ala Asp Thr Asn Asp Asn Pro Pro | 440 | 445 | 450 |
| Val Phe Pro Gln Ala Ser Tyr Ser Ala Tyr Ile Pro Glu Asn Asn | 455 | 460 | 465 |
| Pro Arg Gly Val Ser Leu Val Ser Val Thr Ala His Asp Pro Asp | 470 | 475 | 480 |
| Cys Glu Glu Asn Ala Gln Ile Thr Tyr Ser Leu Ala Glu Asn Thr | 485 | 490 | 495 |
| Ile Gln Gly Ala Ser Leu Ser Ser Tyr Val Ser Ile Asn Ser Asp | 500 | 505 | 510 |
| Thr Gly Val Leu Tyr Ala Leu Ser Ser Phe Asp Tyr Glu Gln Phe | 515 | 520 | 525 |
| Arg Asp Leu Gln Val Lys Val Met Ala Arg Asp Asn Gly His Pro | 530 | 535 | 540 |
| Pro Leu Ser Ser Asn Val Ser Leu Ser Leu Phe Val Leu Asp Gln | 545 | 550 | 555 |
| Asn Asp Asn Ala Pro Glu Ile Leu Tyr Pro Ala Leu Pro Thr Asp | 560 | 565 | 570 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Gly | Ser | Thr | Gly | Val | Glu | Leu | Ala | Pro | Arg | Ser | Ala | Glu | Pro | Gly | | 575 | 580 | 585 |
| Tyr | Leu | Val | Thr | Lys | Val | Val | Ala | Val | Asp | Arg | Asp | Ser | Gly | Gln | | 590 | 595 | 600 |
| Asn | Ala | Trp | Leu | Ser | Tyr | Arg | Leu | Leu | Lys | Ala | Ser | Glu | Pro | Gly | | 605 | 610 | 615 |
| Leu | Phe | Ser | Val | Gly | Leu | His | Thr | Gly | Glu | Val | Arg | Thr | Ala | Arg | | 620 | 625 | 630 |
| Ala | Leu | Leu | Asp | Arg | Asp | Ala | Leu | Lys | Gln | Ser | Leu | Val | Val | Ala | | 635 | 640 | 645 |
| Val | Gln | Asp | His | Gly | Gln | Pro | Pro | Leu | Ser | Ala | Thr | Val | Thr | Leu | | 650 | 655 | 660 |
| Thr | Val | Ala | Val | Ala | Asp | Ser | Ile | Pro | Gln | Val | Leu | Ala | Asp | Leu | | 665 | 670 | 675 |
| Gly | Ser | Leu | Glu | Ser | Pro | Ala | Asn | Ser | Glu | Thr | Ser | Asp | Leu | Thr | | 680 | 685 | 690 |
| Leu | Tyr | Leu | Val | Val | Ala | Val | Ala | Ala | Val | Ser | Cys | Val | Phe | Leu | | 695 | 700 | 705 |
| Ala | Phe | Val | Ile | Leu | Leu | Leu | Ala | Leu | Arg | Leu | Arg | Arg | Trp | His | | 710 | 715 | 720 |
| Lys | Ser | Arg | Leu | Leu | Gln | Ala | Ser | Gly | Gly | Gly | Leu | Thr | Gly | Ala | | 725 | 730 | 735 |
| Pro | Ala | Ser | His | Phe | Val | Gly | Val | Asp | Gly | Val | Gln | Ala | Phe | Leu | | 740 | 745 | 750 |
| Gln | Thr | Tyr | Ser | His | Glu | Val | Ser | Leu | Thr | Thr | Asp | Ser | Arg | Lys | | 755 | 760 | 765 |
| Ser | His | Leu | Ile | Phe | Pro | Gln | Pro | Asn | Tyr | Ala | Asp | Met | Leu | Val | | 770 | 775 | 780 |
| Ser | Gln | Glu | Ser | Phe | Glu | Lys | Ser | Glu | Pro | Leu | Leu | Leu | Ser | Gly | | 785 | 790 | 795 |
| Asp | Ser | Val | Phe | Ser | Lys | Asp | Ser | His | Gly | Leu | Ile | Glu | Val | Ser | | 800 | 805 | 810 |
| Leu | Tyr | Gln | Ile | Phe | Phe | Leu | Phe | Phe | Phe | Asn | Cys | Ser | Val | Ser | | 815 | 820 | 825 |
| Gln | Ala | Gly | Val | Gln | Arg | Tyr | Asp | His | Ser | Ser | Leu | Arg | Pro | Gln | | 830 | 835 | 840 |
| Thr | Pro | Arg | Leu | Lys | Gln | Leu | Ser | His | Leu | Cys | Leu | Arg | Cys | Asn | | 845 | 850 | 855 |

Arg Asp Tyr Arg Cys Lys Pro Pro Thr Val Cys Leu Ser Ile Tyr
860 865 870

Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Leu Leu
875 880 885

Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp
890 895 900

Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro
905 910 915

Ala

<210> 391

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 391

tccgtctctg tgaaccgccc cac 23

<210> 392

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 392

ctcgggcgca ttgtcgttct ggtc 24

<210> 393

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 393

ccgactgtga aagagaacgc cccagatcca cttgttcccc 40

<210> 394

<211> 999

<212> DNA

<213> Homo sapiens

<400> 394

cccaggctct agtgcaggag gagaaggagg aggagcagga ggtggagatt 50

cccagttaaa aggtccaga atcgtgtacc aggcagagaa ctgaagtact 100

ggggcctcct ccactgggtc cgaatcagta ggtgaccccg cccctggatt 150
 ctggaagacc tcaccatggg acgccccga cctcgtgcg ccaagacgtg 200
 gatgttcctg ctcttgctgg ggggagcctg ggcaggacac tccagggcac 250
 aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct 300
 tggcaggcgg ccttgttcca gggccagcaa ctactctgtg gcggtgtcct 350
 tgtaggtggc aactgggtcc ttacagctgc ccactgtaaa aaaccgaaat 400
 acacagtacg cctgggagac cacagcctac agaataaaga tggcccagag 450
 caagaaatac ctgtggttca gtccatccca caccctgct acaacagcag 500
 cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550
 aggcattcct ggggtccaaa gtgaagccca tcagcctggc agatcattgc 600
 acccagcctg gccagaagtg caccgtctca ggctggggca ctgtcaccag 650
 tccccgagag aattttcctg acactctcaa ctgtgcagaa gtaaaaatct 700
 ttccccagaa gaagtgtgag gatgcttacc cggggcagat cacagatggc 750
 atggtctgtg caggcagcag caaaggggct gacacgtgcc agggcgattc 800
 tggaggcccc ctggtgtgtg atggtgcact ccagggcata acatcctggg 850
 gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900
 tgccgctacc tggactggat caagaagatc ataggcagca agggctgatt 950
 ctaggataag cactagatct cccttaataa actcacaact ctctggttc 999

<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Pro | Arg | Pro | Arg | Ala | Ala | Lys | Thr | Trp | Met | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Gly | Gly | Ala | Trp | Ala | Gly | His | Ser | Arg | Ala | Gln | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Val | Leu | Gly | Gly | His | Glu | Cys | Gln | Pro | His | Ser | Gln | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gln | Ala | Ala | Leu | Phe | Gln | Gly | Gln | Gln | Leu | Leu | Cys | Gly | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Val | Gly | Gly | Asn | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Lys |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Pro | Lys | Tyr | Thr | Val | Arg | Leu | Gly | Asp | His | Ser | Leu | Gln | Asn | 80 | 85 | 90 |
| Lys | Asp | Gly | Pro | Glu | Gln | Glu | Ile | Pro | Val | Val | Gln | Ser | Ile | Pro | 95 | 100 | 105 |
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp | 110 | 115 | 120 |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys | 125 | 130 | 135 |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln | 140 | 145 | 150 |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu | 155 | 160 | 165 |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro | 170 | 175 | 180 |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly | 185 | 190 | 195 |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly | 200 | 205 | 210 |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile | 215 | 220 | 225 |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly | 230 | 235 | 240 |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile | 245 | 250 | 255 |
| Ile | Gly | Ser | Lys | Gly | | | | | | | | | | | 260 | | |

<210> 396

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 396

cagcctacag aataaagatg gcc 24

<210> 397

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 397

ggtgcaatga tctgccaggc tgat 24

<210> 398

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaatacct gtggttcagt ccatcccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

ggcgccggtg caccgggagg gctgagcgcc tcctgcggcc cggectgcgc 50
gccccggccc gccgcgccgc ccacgcccc accccggccc gcgcccccta 100
gccccgccc gggcccgccg ccgcgcccgc gccaggtga gcgctccgcc 150
cgccgcgagg ccccgcccc gcccgcccc gcccgcccc ggccggcggg 200
ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250
tcatcctccc ggcggcccgc gctgcgagcg ccccgccagt ccgcgccgcc 300
gccgcctcg cctgtgcgc cctgcgcgcc ctgcgcaccc gcggcccag 350
cccagccaga gccgggagg ggcgagcgcg ccgagcctcg tcccgcggcc 400
gggcccgggg cgggccgtag cggcgggccc tggatgcgga cccggccgcg 450
gggagacggg cggccgcccc gaaacgactt tcagtcccc acgcgccccg 500
cccaaccctt acgatgaaga gggcgtccgc tggaggaggc cggctgctgg 550
catgggtgct gtggctgcag gcctggcagg tggcagcccc atgccaggt 600
gcctgcgtat gctacaatga gcccaaggtg acgacaagct gccccagca 650
gggcctgcag gctgtgccc tgggcatccc tgctgccagc cagcgcatct 700
tcctgcacgg caaccgcac tcgcatgtgc cagctgccag cttccgtgcc 750
tgccgcaacc tcaccatcct gtggctgcac tcgaatgtgc tggcccgaat 800
tgatgcggct gccttactg gcctggccct cctggagcag ctggacctca 850
gcgataatgc acagctccgg tctgtggacc ctgccacatt ccacggcctg 900

ggccgcctac acacgctgca cctggaccgc tgcggcctgc aggagctggg 950
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acaacgcgct gcaggcactg cctgatgaca ccttccgcga cctggggaac 1050
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cgctttccgt gggctgcaca gcctcgaccg tctctactg caccagaacc 1150
gcgtggccca tgtgcacccg catgccttcc gtgaccttgg ccgcctcatg 1200
aactctatc tgtttgcaa caatctatca gcgctgccca ctgaggccct 1250
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tgacctcaaa cgcctagctg ccaatgacct gcagggctgc gctgtggcca 1450
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aatgactcac cctttgggac tctgcctggc tctgctgagc ccccgctcac 1700
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cgtctgggcc aggcaggcag cgggggtggc gggactggtg actcagaagg 1850
ctcaggtgcc ctaccagcc tcacctgag cctcaccccc ctgggcctgg 1900
cgctggtgct gtggacagt cttgggccct gctgaccccc agcggacaca 1950
agagcgtgct cagcagccag gtgtgtgtac atacggggtc tctctccacg 2000
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tccctgatgg acgcctgcc cccgccacc ccatctccac cccatcatgt 2100
ttacaggggt cggcggcagc gtttgttcca gaacgccgc tcccaccag 2150
atcgcggtat atagagatat gcattttatt ttacttgtgt aaaaatatcg 2200
gacgacgtgg aataaagagc tcttttctta aaaaaa 2236

<210> 400

<211> 473

<212> PRT

<213> Homo sapiens

<400> 400

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Arg | Ala | Ser | Ala | Gly | Gly | Ser | Arg | Leu | Leu | Ala | Trp | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Trp | Leu | Gln | Ala | Trp | Gln | Val | Ala | Ala | Pro | Cys | Pro | Gly | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |

| | | | |
|-----------------|---------------------|-------------------------|-----|
| Leu Trp Ala Trp | Leu Gln Lys Phe Arg | Gly Ser Ser Ser Glu Val | |
| 275 | | 280 | 285 |
| Pro Cys Ser Leu | Pro Gln Arg Leu Ala | Gly Arg Asp Leu Lys Arg | |
| 290 | | 295 | 300 |
| Leu Ala Ala Asn | Asp Leu Gln Gly Cys | Ala Val Ala Thr Gly Pro | |
| 305 | | 310 | 315 |
| Tyr His Pro Ile | Trp Thr Gly Arg Ala | Thr Asp Glu Glu Pro Leu | |
| 320 | | 325 | 330 |
| Gly Leu Pro Lys | Cys Cys Gln Pro Asp | Ala Ala Asp Lys Ala Ser | |
| 335 | | 340 | 345 |
| Val Leu Glu Pro | Gly Arg Pro Ala Ser | Ala Gly Asn Ala Leu Lys | |
| 350 | | 355 | 360 |
| Gly Arg Val Pro | Pro Gly Asp Ser Pro | Pro Gly Asn Gly Ser Gly | |
| 365 | | 370 | 375 |
| Pro Arg His Ile | Asn Asp Ser Pro Phe | Gly Thr Leu Pro Gly Ser | |
| 380 | | 385 | 390 |
| Ala Glu Pro Pro | Leu Thr Ala Val Arg | Pro Glu Gly Ser Glu Pro | |
| 395 | | 400 | 405 |
| Pro Gly Phe Pro | Thr Ser Gly Pro Arg | Arg Arg Pro Gly Cys Ser | |
| 410 | | 415 | 420 |
| Arg Lys Asn Arg | Thr Arg Ser His Cys | Arg Leu Gly Gln Ala Gly | |
| 425 | | 430 | 435 |
| Ser Gly Gly Gly | Gly Thr Gly Asp Ser | Glu Gly Ser Gly Ala Leu | |
| 440 | | 445 | 450 |
| Pro Ser Leu Thr | Cys Ser Leu Thr Pro | Leu Gly Leu Ala Leu Val | |
| 455 | | 460 | 465 |
| Leu Trp Thr Val | Leu Gly Pro Cys | | |
| 470 | | | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 401

tggctgccct gcagtacctc tacc 24

<210> 402

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 402

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<210> 403

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 403

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<210> 404

<211> 2738

<212> DNA

<213> Homo sapiens

<400> 404

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 <211> 798
 <212> PRT
 <213> Homo sapiens

<400> 405

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Ser | Gly | Lys | Leu | Ile | Cys | Arg | Gln | Arg | Gln | Val | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Phe | Ser | Phe | Leu | Leu | Leu | Gly | Leu | Ser | Leu | Ala | Gly | Ala | Ala | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | |
| Pro | Arg | Ser | Tyr | Ser | Val | Val | Glu | Glu | Thr | Glu | Gly | Ser | Ser | Phe |
| | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Thr | Asn | Leu | Ala | Lys | Asp | Leu | Gly | Leu | Glu | Gln | Arg | Glu | Phe |
| | | | 50 | | | | | 55 | | | | | 60 | |
| Ser | Arg | Arg | Gly | Val | Arg | Val | Val | Ser | Arg | Gly | Asn | Lys | Leu | His |
| | | | 65 | | | | | 70 | | | | | 75 | |
| Leu | Gln | Leu | Asn | Gln | Glu | Thr | Ala | Asp | Leu | Leu | Leu | Asn | Glu | Lys |
| | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Asp | Arg | Glu | Asp | Leu | Cys | Gly | His | Thr | Glu | Pro | Cys | Val | Leu |
| | | | 95 | | | | | 100 | | | | | 105 | |
| Arg | Phe | Gln | Val | Leu | Leu | Glu | Ser | Pro | Phe | Glu | Phe | Phe | Gln | Ala |
| | | | 110 | | | | | 115 | | | | | 120 | |
| Glu | Leu | Gln | Val | Ile | Asp | Ile | Asn | Asp | His | Ser | Pro | Val | Phe | Leu |
| | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Lys | Gln | Met | Leu | Val | Lys | Val | Ser | Glu | Ser | Ser | Pro | Pro | Gly |
| | | | 140 | | | | | 145 | | | | | 150 | |

| | | | |
|---|-----|-----|-----|
| Thr Thr Phe Pro Leu Lys Asn Ala Glu Asp Leu Asp Val Gly Gln | 155 | 160 | 165 |
| Asn Asn Ile Glu Asn Tyr Ile Ile Ser Pro Asn Ser Tyr Phe Arg | 170 | 175 | 180 |
| Val Leu Thr Arg Lys Arg Ser Asp Gly Arg Lys Tyr Pro Glu Leu | 185 | 190 | 195 |
| Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Glu Ala Glu Leu Arg | 200 | 205 | 210 |
| Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly | 215 | 220 | 225 |
| Thr Ala Gln Val Tyr Ile Glu Val Leu Asp Val Asn Asp Asn Ala | 230 | 235 | 240 |
| Pro Glu Phe Glu Gln Pro Phe Tyr Arg Val Gln Ile Ser Glu Asp | 245 | 250 | 255 |
| Ser Pro Val Gly Phe Leu Val Val Lys Val Ser Ala Thr Asp Val | 260 | 265 | 270 |
| Asp Thr Gly Val Asn Gly Glu Ile Ser Tyr Ser Leu Phe Gln Ala | 275 | 280 | 285 |
| Ser Glu Glu Ile Gly Lys Thr Phe Lys Ile Asn Pro Leu Thr Gly | 290 | 295 | 300 |
| Glu Ile Glu Leu Lys Lys Gln Leu Asp Phe Glu Lys Leu Gln Ser | 305 | 310 | 315 |
| Tyr Glu Val Asn Ile Glu Ala Arg Asp Ala Gly Thr Phe Ser Gly | 320 | 325 | 330 |
| Lys Cys Thr Val Leu Ile Gln Val Ile Asp Val Asn Asp His Ala | 335 | 340 | 345 |
| Pro Glu Val Thr Met Ser Ala Phe Thr Ser Pro Ile Pro Glu Asn | 350 | 355 | 360 |
| Ala Pro Glu Thr Val Val Ala Leu Phe Ser Val Ser Asp Leu Asp | 365 | 370 | 375 |
| Ser Gly Glu Asn Gly Lys Ile Ser Cys Ser Ile Gln Glu Asp Leu | 380 | 385 | 390 |
| Pro Phe Leu Leu Lys Ser Ala Glu Asn Phe Tyr Thr Leu Leu Thr | 395 | 400 | 405 |
| Glu Arg Pro Leu Asp Arg Glu Ser Arg Ala Glu Tyr Asn Ile Thr | 410 | 415 | 420 |
| Ile Thr Val Thr Asp Leu Gly Thr Pro Met Leu Ile Thr Gln Leu | 425 | 430 | 435 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Asn Met Thr Val | Leu Ile Ala Asp Val | Asn Asp Asn Ala Pro | Ala |
| 440 | 445 | 450 | |
| Phe Thr Gln Thr | Ser Tyr Thr Leu Phe | Val Arg Glu Asn Asn | Ser |
| 455 | 460 | 465 | |
| Pro Ala Leu His | Ile Arg Ser Val Ser | Ala Thr Asp Arg Asp | Ser |
| 470 | 475 | 480 | |
| Gly Thr Asn Ala | Gln Val Thr Tyr Ser | Leu Leu Pro Pro Gln | Asp |
| 485 | 490 | 495 | |
| Pro His Leu Pro | Leu Thr Ser Leu Val | Ser Ile Asn Ala Asp | Asn |
| 500 | 505 | 510 | |
| Gly His Leu Phe | Ala Leu Arg Ser Leu | Asp Tyr Glu Ala Leu | Gln |
| 515 | 520 | 525 | |
| Gly Phe Gln Phe | Arg Val Gly Ala Ser | Asp His Gly Ser Pro | Ala |
| 530 | 535 | 540 | |
| Leu Ser Ser Glu | Ala Leu Val Arg Val | Val Val Leu Asp Ala | Asn |
| 545 | 550 | 555 | |
| Asp Asn Ser Pro | Phe Val Leu Tyr Pro | Leu Gln Asn Gly Ser | Ala |
| 560 | 565 | 570 | |
| Pro Cys Thr Glu | Leu Val Pro Arg Ala | Ala Glu Pro Gly Tyr | Leu |
| 575 | 580 | 585 | |
| Val Thr Lys Val | Val Ala Val Asp Gly | Asp Ser Gly Gln Asn | Ala |
| 590 | 595 | 600 | |
| Trp Leu Ser Tyr | Gln Leu Leu Lys Ala | Thr Glu Leu Gly Leu | Phe |
| 605 | 610 | 615 | |
| Gly Val Trp Ala | His Asn Gly Glu Val | Arg Thr Ala Arg Leu | Leu |
| 620 | 625 | 630 | |
| Ser Glu Arg Asp | Ala Ala Lys His Arg | Leu Val Val Leu Val | Lys |
| 635 | 640 | 645 | |
| Asp Asn Gly Glu | Pro Pro Arg Ser Ala | Thr Ala Thr Leu His | Val |
| 650 | 655 | 660 | |
| Leu Leu Val Asp | Gly Phe Ser Gln Pro | Tyr Leu Pro Leu Pro | Glu |
| 665 | 670 | 675 | |
| Ala Ala Pro Thr | Gln Ala Gln Ala Asp | Leu Leu Thr Val Tyr | Leu |
| 680 | 685 | 690 | |
| Val Val Ala Leu | Ala Ser Val Ser Ser | Leu Phe Leu Phe Ser | Val |
| 695 | 700 | 705 | |
| Leu Leu Phe Val | Ala Val Arg Leu Cys | Arg Arg Ser Arg Ala | Ala |
| 710 | 715 | 720 | |

Ser Val Gly Arg Cys Leu Val Pro Glu Gly Pro Leu Pro Gly His
725 730 735

Leu Val Asp Met Ser Gly Thr Arg Thr Leu Ser Gln Ser Tyr Gln
740 745 750

Tyr Glu Val Cys Leu Ala Gly Gly Ser Gly Thr Asn Glu Phe Lys
755 760 765

Phe Leu Lys Pro Ile Ile Pro Asn Phe Pro Pro Gln Cys Pro Gly
770 775 780

Lys Glu Ile Gln Gly Asn Ser Thr Phe Pro Asn Asn Phe Gly Phe
785 790 795

Asn Ile Gln

<210> 406

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 406

ctgagaacgc gcctgaaact gtg 23

<210> 407

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 407

agcgttgta ttgacatcgg cg 22

<210> 408

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 408

ttagttgctc cattcaggag gatctaccct tcctcctgaa atccgcggaa 50

<210> 409

<211> 1379

<212> DNA

<213> Homo sapiens

<400> 409

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 cggtcgacga ccgccccgcg tcatgcggct cctcggtggg tggcaagtat 150
 tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200
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 aaccaatggc cagatttaat catacagatc gaacactgga aacactgaaa 950
 atcttcattt ttaatcagac aggtatagaa gccaagaaga atgtggtggt 1000
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<211> 360
<212> PRT
<213> Homo sapiens

<400> 410

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Ala | Ala | Gly | Arg | Arg | Pro | Pro | Arg | Val | Met | Arg | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Trp | Trp | Gln | Val | Leu | Leu | Trp | Val | Leu | Gly | Leu | Pro | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Gly | Val | Glu | Val | Ala | Glu | Glu | Ser | Gly | Arg | Leu | Trp | Ser | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Gln | Pro | Ala | His | Pro | Leu | Gln | Val | Gly | Ala | Val | Tyr | Leu | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Glu | Glu | Leu | Leu | His | Asp | Pro | Met | Gly | Gln | Asp | Arg | Ala | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Glu | Ala | Asn | Ala | Val | Leu | Gly | Leu | Asp | Thr | Gln | Gly | Asp | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Val | Met | Leu | Ser | Val | Ile | Pro | Gly | Glu | Ala | Glu | Asp | Lys | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Ser | Glu | Pro | Ser | Gly | Val | Thr | Cys | Gly | Ala | Gly | Gly | Ala | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Ser | Arg | Cys | Asn | Val | Arg | Glu | Ser | Leu | Phe | Ser | Leu | Asp | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Gly | Ala | His | Phe | Pro | Asp | Arg | Glu | Glu | Glu | Tyr | Tyr | Thr | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Glu | Val | Ala | Glu | Ser | Asp | Ala | Ala | Pro | Thr | Glu | Asp | Ser | Asn |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Thr | Glu | Ser | Leu | Lys | Ser | Pro | Lys | Val | Asn | Cys | Glu | Glu | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Ile | Thr | Gly | Leu | Glu | Asn | Phe | Thr | Leu | Lys | Ile | Leu | Asn | Met |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Gln | Asp | Leu | Met | Asp | Phe | Leu | Asn | Pro | Asn | Gly | Ser | Asp | Cys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Leu | Val | Leu | Phe | Tyr | Thr | Pro | Trp | Cys | Arg | Phe | Ser | Ala | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Ala | Pro | His | Phe | Asn | Ser | Leu | Pro | Arg | Ala | Phe | Pro | Ala | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| His | Phe | Leu | Ala | Leu | Asp | Ala | Ser | Gln | His | Ser | Ser | Leu | Ser | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Arg | Phe | Gly | Thr | Val | Ala | Val | Pro | Asn | Ile | Leu | Leu | Phe | Gln | Gly |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 260 | | 265 | | 270 |
| Ala Lys Pro Met | Ala Arg Phe Asn His | Thr Asp Arg Thr Leu Glu | | | |
| | 275 | 280 | | 285 | |
| Thr Leu Lys Ile | Phe Ile Phe Asn Gln | Thr Gly Ile Glu Ala Lys | | | |
| | 290 | 295 | | 300 | |
| Lys Asn Val Val | Val Thr Gln Ala Asp | Gln Ile Gly Pro Leu Pro | | | |
| | 305 | 310 | | 315 | |
| Ser Thr Leu Ile | Lys Ser Val Asp Trp | Leu Leu Val Phe Ser Leu | | | |
| | 320 | 325 | | 330 | |
| Phe Phe Leu Ile | Ser Phe Ile Met Tyr | Ala Thr Ile Arg Thr Glu | | | |
| | 335 | 340 | | 345 | |
| Ser Ile Arg Trp | Leu Ile Pro Gly Gln | Glu Gln Glu His Val Glu | | | |
| | 350 | 355 | | 360 | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 411

cacagagcca gaagtggcgg aatc 24

<210> 412

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 412

ccacatgttc ctgctcttgt cctgg 25

<210> 413

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

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<400> 413

cggtagtgac tgtactctag tcctgtttta caccccgtag tgccg 45

<210> 414

<211> 1196

<212> DNA

<213> Homo sapiens

<400> 414

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gcgcagcaat tgcaagccca tcccggtcaa cctgcagctg tgccacggca 200
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aaggaggtgc tggagcaggc cggcgcttgg atcccgctgg tcatgaagca 300
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gaatcttgta gaaatattca aactaataaa atcatgaata ttttaa 1196

<210> 415

<211> 295

<212> PRT

<213> Homo sapiens

<400> 415

Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser

| 1 | 5 | 10 | 15 |
|---------------------|---------------------|---------------------|-----|
| His Cys Cys Leu Gly | Ser Ala Arg Gly | Leu Phe Leu Phe Gly | Gln |
| 20 | | 25 | 30 |
| Pro Asp Phe Ser Tyr | Lys Arg Ser Asn Cys | Lys Pro Ile Pro Val | |
| 35 | | 40 | 45 |
| Asn Leu Gln Leu Cys | His Gly Ile Glu Tyr | Gln Asn Met Arg Leu | |
| 50 | | 55 | 60 |
| Pro Asn Leu Leu Gly | His Glu Thr Met Lys | Glu Val Leu Glu Gln | |
| 65 | | 70 | 75 |
| Ala Gly Ala Trp Ile | Pro Leu Val Met Lys | Gln Cys His Pro Asp | |
| 80 | | 85 | 90 |
| Thr Lys Lys Phe Leu | Cys Ser Leu Phe Ala | Pro Val Cys Leu Asp | |
| 95 | | 100 | 105 |
| Asp Leu Asp Glu Thr | Ile Gln Pro Cys His | Ser Leu Cys Val Gln | |
| 110 | | 115 | 120 |
| Val Lys Asp Arg Cys | Ala Pro Val Met Ser | Ala Phe Gly Phe Pro | |
| 125 | | 130 | 135 |
| Trp Pro Asp Met Leu | Glu Cys Asp Arg Phe | Pro Gln Asp Asn Asp | |
| 140 | | 145 | 150 |
| Leu Cys Ile Pro Leu | Ala Ser Ser Asp His | Leu Leu Pro Ala Thr | |
| 155 | | 160 | 165 |
| Glu Glu Ala Pro Lys | Val Cys Glu Ala Cys | Lys Asn Lys Asn Asp | |
| 170 | | 175 | 180 |
| Asp Asp Asn Asp Ile | Met Glu Thr Leu Cys | Lys Asn Asp Phe Ala | |
| 185 | | 190 | 195 |
| Leu Lys Ile Lys Val | Lys Glu Ile Thr Tyr | Ile Asn Arg Asp Thr | |
| 200 | | 205 | 210 |
| Lys Ile Ile Leu Glu | Thr Lys Ser Lys Thr | Ile Tyr Lys Leu Asn | |
| 215 | | 220 | 225 |
| Gly Val Ser Glu Arg | Asp Leu Lys Lys Ser | Val Leu Trp Leu Lys | |
| 230 | | 235 | 240 |
| Asp Ser Leu Gln Cys | Thr Cys Glu Glu Met | Asn Asp Ile Asn Ala | |
| 245 | | 250 | 255 |
| Pro Tyr Leu Val Met | Gly Gln Lys Gln Gly | Gly Glu Leu Val Ile | |
| 260 | | 265 | 270 |
| Thr Ser Val Lys Arg | Trp Gln Lys Gly Gln | Arg Glu Phe Lys Arg | |
| 275 | | 280 | 285 |
| Ile Ser Arg Ser Ile | Arg Lys Leu Gln Cys | | |

<210> 416
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 416
cctggctcgc tgctgctgct c 21

<210> 417
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 417
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<210> 418
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 418
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<210> 419
<211> 1830
<212> DNA
<213> Homo sapiens

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<210> 420
<211> 560
<212> PRT
<213> Homo sapiens

<400> 420

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Pro | Thr | Glu | Ala | Glu | Thr | Gly | Leu | Ala | Glu | Pro | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Cys | Ala | Gln | Arg | Gly | His | Arg | Thr | Tyr | Ala | Arg | Arg | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Phe | Leu | Leu | Ala | Ile | Ser | Leu | Leu | Asn | Cys | Ser | Asn | Ala | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Trp | Leu | Ser | Phe | Ala | Pro | Val | Ala | Asp | Val | Ile | Ala | Glu | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Val | Leu | Ser | Met | Glu | Gln | Ile | Asn | Trp | Leu | Ser | Leu | Val | Tyr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Val | Val | Ser | Thr | Pro | Phe | Gly | Val | Ala | Ala | Ile | Trp | Ile | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Ser | Val | Gly | Leu | Arg | Ala | Ala | Thr | Ile | Leu | Gly | Ala | Trp | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | Phe | Ala | Gly | Ser | Val | Leu | Arg | Met | Val | Pro | Cys | Met | Val | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Thr | Gln | Asn | Pro | Phe | Ala | Phe | Leu | Met | Gly | Gly | Gln | Ser | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Cys | Ala | Leu | Ala | Gln | Ser | Leu | Val | Ile | Phe | Ser | Pro | Ala | Lys | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ala | Ala | Leu | Trp | Phe | Pro | Glu | His | Gln | Arg | Ala | Thr | Ala | Asn | Met |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Ala | Thr | Met | Ser | Asn | Pro | Leu | Gly | Val | Leu | Val | Ala | Asn | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Ser | Pro | Val | Leu | Val | Lys | Lys | Gly | Glu | Asp | Ile | Pro | Leu | Met |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Gly | Val | Tyr | Thr | Ile | Pro | Ala | Gly | Val | Val | Cys | Leu | Leu | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Ile | Cys | Leu | Trp | Glu | Ser | Val | Pro | Pro | Thr | Pro | Pro | Ser | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Ala | Ala | Ser | Ser | Thr | Ser | Glu | Lys | Phe | Leu | Asp | Gly | Leu | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Gln | Leu | Met | Trp | Asn | Lys | Ala | Tyr | Val | Ile | Leu | Ala | Val | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | |
|-----------------|---------------------|---------------------|---------|
| Leu Gly Gly Met | Ile Gly Ile Ser Ala | Ser Phe Ser Ala | Leu Leu |
| 260 | | 265 | 270 |
| Glu Gln Ile Leu | Cys Ala Ser Gly His | Ser Ser Gly Phe Ser | Gly |
| 275 | | 280 | 285 |
| Leu Cys Gly Ala | Leu Phe Ile Thr Phe | Gly Ile Leu Gly Ala | Leu |
| 290 | | 295 | 300 |
| Ala Leu Gly Pro | Tyr Val Asp Arg Thr | Lys His Phe Thr Glu | Ala |
| 305 | | 310 | 315 |
| Thr Lys Ile Gly | Leu Cys Leu Phe Ser | Leu Ala Cys Val Pro | Phe |
| 320 | | 325 | 330 |
| Ala Leu Val Ser | Gln Leu Gln Gly Gln | Thr Leu Ala Leu Ala | Ala |
| 335 | | 340 | 345 |
| Thr Cys Ser Leu | Leu Gly Leu Phe Gly | Phe Ser Val Gly Pro | Val |
| 350 | | 355 | 360 |
| Ala Met Glu Leu | Ala Val Glu Cys Ser | Phe Pro Val Gly Glu | Gly |
| 365 | | 370 | 375 |
| Ala Ala Thr Gly | Met Ile Phe Val Leu | Gly Gln Ala Glu Gly | Ile |
| 380 | | 385 | 390 |
| Leu Ile Met Leu | Ala Met Thr Ala Leu | Thr Val Arg Arg Ser | Glu |
| 395 | | 400 | 405 |
| Pro Ser Leu Ser | Thr Cys Gln Gln Gly | Glu Asp Pro Leu Asp | Trp |
| 410 | | 415 | 420 |
| Thr Val Ser Leu | Leu Leu Met Ala Gly | Leu Cys Thr Phe Phe | Ser |
| 425 | | 430 | 435 |
| Cys Ile Leu Ala | Val Phe Phe His Thr | Pro Tyr Arg Arg Leu | Gln |
| 440 | | 445 | 450 |
| Ala Glu Ser Gly | Glu Pro Pro Ser Thr | Arg Asn Ala Val Gly | Gly |
| 455 | | 460 | 465 |
| Ala Asp Ser Gly | Pro Gly Val Asp Arg | Gly Gly Ala Gly Arg | Ala |
| 470 | | 475 | 480 |
| Gly Val Leu Gly | Pro Ser Thr Ala Thr | Pro Glu Cys Thr Ala | Arg |
| 485 | | 490 | 495 |
| Gly Ala Ser Leu | Glu Asp Pro Arg Gly | Pro Gly Ser Pro His | Pro |
| 500 | | 505 | 510 |
| Ala Cys His Arg | Ala Thr Pro Arg Ala | Gln Gly Pro Ala Ala | Thr |
| 515 | | 520 | 525 |
| Asp Ala Pro Ser | Arg Pro Gly Arg Leu | Ala Gly Arg Val Gln | Ala |
| 530 | | 535 | 540 |

Ser Arg Phe Ile Asp Pro Ala Gly Ser His Ser Ser Phe Ser Ser
545 550 555

Pro Trp Val Ile Thr
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 421
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<210> 422
<211> 25
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 422
cggttcaata aacctggacg cttgg 25

<210> 423
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 423
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<210> 424
<211> 4313
<212> DNA
<213> Homo sapiens

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<210> 425

<211> 1184

<212> PRT

<213> Homo sapiens

<400> 425

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Gln | Leu | Leu | Gln | Leu | Leu | Leu | Gly | Leu | Leu | Gly | Pro | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | |
|---|-----|-----|-----|
| Gly Tyr Leu Phe Leu Leu Gly Asp Cys Gln Glu Val Thr Thr Leu | 20 | 25 | 30 |
| Thr Val Lys Tyr Gln Val Ser Glu Glu Val Pro Ser Gly Thr Val | 35 | 40 | 45 |
| Ile Gly Lys Leu Ser Gln Glu Leu Gly Arg Glu Glu Arg Arg Arg | 50 | 55 | 60 |
| Gln Ala Gly Ala Ala Phe Gln Val Leu Gln Leu Pro Gln Ala Leu | 65 | 70 | 75 |
| Pro Ile Gln Val Asp Ser Glu Glu Gly Leu Leu Ser Thr Gly Arg | 80 | 85 | 90 |
| Arg Leu Asp Arg Glu Gln Leu Cys Arg Gln Trp Asp Pro Cys Leu | 95 | 100 | 105 |
| Val Ser Phe Asp Val Leu Ala Thr Gly Asp Leu Ala Leu Ile His | 110 | 115 | 120 |
| Val Glu Ile Gln Val Leu Asp Ile Asn Asp His Gln Pro Arg Phe | 125 | 130 | 135 |
| Pro Lys Gly Glu Gln Glu Leu Glu Ile Ser Glu Ser Ala Ser Leu | 140 | 145 | 150 |
| Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly | 155 | 160 | 165 |
| Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe | 170 | 175 | 180 |
| Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr Lys His Ala Glu | 185 | 190 | 195 |
| Leu Ile Val Val Lys Glu Leu Asp Arg Glu Ile His Ser Phe Phe | 200 | 205 | 210 |
| Asp Leu Val Leu Thr Ala Tyr Asp Asn Gly Asn Pro Pro Lys Ser | 215 | 220 | 225 |
| Gly Thr Ser Leu Val Lys Val Asn Val Leu Asp Ser Asn Asp Asn | 230 | 235 | 240 |
| Ser Pro Ala Phe Ala Glu Ser Ser Leu Ala Leu Glu Ile Gln Glu | 245 | 250 | 255 |
| Asp Ala Ala Pro Gly Thr Leu Leu Ile Lys Leu Thr Ala Thr Asp | 260 | 265 | 270 |
| Pro Asp Gln Gly Pro Asn Gly Glu Val Glu Phe Phe Leu Ser Lys | 275 | 280 | 285 |
| His Met Pro Pro Glu Val Leu Asp Thr Phe Ser Ile Asp Ala Lys | 290 | 295 | 300 |

| | | |
|---------------------|---|-------------------------|
| Thr Gly Gln Val | Ile Leu Arg Arg Pro | Leu Asp Tyr Glu Lys Asn |
| 305 | 310 | 315 |
| Pro Ala Tyr Glu Val | Asp Val Gln Ala Arg Asp Leu Gly Pro | Asn |
| 320 | 325 | 330 |
| Pro Ile Pro Ala His | Cys Lys Val Leu Ile Lys Val Leu Asp | Val |
| 335 | 340 | 345 |
| Asn Asp Asn Ile Pro | Ser Ile His Val Thr Trp Ala Ser Gln Pro | |
| 350 | 355 | 360 |
| Ser Leu Val Ser Glu | Ala Leu Pro Lys Asp Ser Phe Ile Ala Leu | |
| 365 | 370 | 375 |
| Val Met Ala Asp Asp | Leu Asp Ser Gly His Asn Gly Leu Val His | |
| 380 | 385 | 390 |
| Cys Trp Leu Ser Gln | Glu Leu Gly His Phe Arg Leu Lys Arg Thr | |
| 395 | 400 | 405 |
| Asn Gly Asn Thr Tyr | Met Leu Leu Thr Asn Ala Thr Leu Asp Arg | |
| 410 | 415 | 420 |
| Glu Gln Trp Pro Lys | Tyr Thr Leu Thr Leu Leu Ala Gln Asp Gln | |
| 425 | 430 | 435 |
| Gly Leu Gln Pro Leu | Ser Ala Lys Lys Gln Leu Ser Ile Gln Ile | |
| 440 | 445 | 450 |
| Ser Asp Ile Asn Asp | Asn Ala Pro Val Phe Glu Lys Ser Arg Tyr | |
| 455 | 460 | 465 |
| Glu Val Ser Thr Arg | Glu Asn Asn Leu Pro Ser Leu His Leu Ile | |
| 470 | 475 | 480 |
| Thr Ile Lys Ala His | Asp Ala Asp Leu Gly Ile Asn Gly Lys Val | |
| 485 | 490 | 495 |
| Ser Tyr Arg Ile Gln | Asp Ser Pro Val Ala His Leu Val Ala Ile | |
| 500 | 505 | 510 |
| Asp Ser Asn Thr Gly | Glu Val Thr Ala Gln Arg Ser Leu Asn Tyr | |
| 515 | 520 | 525 |
| Glu Glu Met Ala Gly | Phe Glu Phe Gln Val Ile Ala Glu Asp Ser | |
| 530 | 535 | 540 |
| Gly Gln Pro Met Leu | Ala Ser Ser Val Ser Val Trp Val Ser Leu | |
| 545 | 550 | 555 |
| Leu Asp Ala Asn Asp | Asn Ala Pro Glu Val Val Gln Pro Val Leu | |
| 560 | 565 | 570 |
| Ser Asp Gly Lys Ala | Ser Leu Ser Val Leu Val Asn Ala Ser Thr | |
| 575 | 580 | 585 |

| | | | |
|---|-----|-----|-----|
| Gly His Leu Leu Val Pro Ile Glu Thr Pro Asn Gly Leu Gly Pro | 590 | 595 | 600 |
| Ala Gly Thr Asp Thr Pro Pro Leu Ala Thr His Ser Ser Arg Pro | 605 | 610 | 615 |
| Phe Leu Leu Thr Thr Ile Val Ala Arg Asp Ala Asp Ser Gly Ala | 620 | 625 | 630 |
| Asn Gly Glu Pro Leu Tyr Ser Ile Arg Asn Gly Asn Glu Ala His | 635 | 640 | 645 |
| Leu Phe Ile Leu Asn Pro His Thr Gly Gln Leu Phe Val Asn Val | 650 | 655 | 660 |
| Thr Asn Ala Ser Ser Leu Ile Gly Ser Glu Trp Glu Leu Glu Ile | 665 | 670 | 675 |
| Val Val Glu Asp Gln Gly Ser Pro Pro Leu Gln Thr Arg Ala Leu | 680 | 685 | 690 |
| Leu Arg Val Met Phe Val Thr Ser Val Asp His Leu Arg Asp Ser | 695 | 700 | 705 |
| Ala Arg Lys Pro Gly Ala Leu Ser Met Ser Met Leu Thr Val Ile | 710 | 715 | 720 |
| Cys Leu Ala Val Leu Leu Gly Ile Phe Gly Leu Ile Leu Ala Leu | 725 | 730 | 735 |
| Phe Met Ser Ile Cys Arg Thr Glu Lys Lys Asp Asn Arg Ala Tyr | 740 | 745 | 750 |
| Asn Cys Arg Glu Ala Glu Ser Thr Tyr Arg Gln Gln Pro Lys Arg | 755 | 760 | 765 |
| Pro Gln Lys His Ile Gln Lys Ala Asp Ile His Leu Val Pro Val | 770 | 775 | 780 |
| Leu Arg Gly Gln Ala Gly Glu Pro Cys Glu Val Gly Gln Ser His | 785 | 790 | 795 |
| Lys Asp Val Asp Lys Glu Ala Met Met Glu Ala Gly Trp Asp Pro | 800 | 805 | 810 |
| Cys Leu Gln Ala Pro Phe His Leu Thr Pro Thr Leu Tyr Arg Thr | 815 | 820 | 825 |
| Leu Arg Asn Gln Gly Asn Gln Gly Ala Pro Ala Glu Ser Arg Glu | 830 | 835 | 840 |
| Val Leu Gln Asp Thr Val Asn Leu Leu Phe Asn His Pro Arg Gln | 845 | 850 | 855 |
| Arg Asn Ala Ser Arg Glu Asn Leu Asn Leu Pro Glu Pro Gln Pro | 860 | 865 | 870 |

| | | | |
|---|------|------|------|
| Ala Thr Gly Gln Pro Arg Ser Arg Pro Leu Lys Val Ala Gly Ser | 875 | 880 | 885 |
| Pro Thr Gly Arg Leu Ala Gly Asp Gln Gly Ser Glu Glu Ala Pro | 890 | 895 | 900 |
| Gln Arg Pro Pro Ala Ser Ser Ala Thr Leu Arg Arg Gln Arg His | 905 | 910 | 915 |
| Leu Asn Gly Lys Val Ser Pro Glu Lys Glu Ser Gly Pro Arg Gln | 920 | 925 | 930 |
| Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe Ala Glu | 935 | 940 | 945 |
| Arg Asn Pro Val Glu Glu Leu Thr Val Asp Ser Pro Pro Val Gln | 950 | 955 | 960 |
| Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln | 965 | 970 | 975 |
| Pro Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly | 980 | 985 | 990 |
| Gly Ser Arg Ser Ala Ile Pro Asp Thr Asp Gly Pro Ser Ala Arg | 995 | 1000 | 1005 |
| Ala Gly Gly Gln Thr Asp Pro Glu Gln Glu Glu Gly Pro Leu Asp | 1010 | 1015 | 1020 |
| Pro Glu Glu Asp Leu Ser Val Lys Gln Leu Leu Glu Glu Glu Leu | 1025 | 1030 | 1035 |
| Ser Ser Leu Leu Asp Pro Ser Thr Gly Leu Ala Leu Asp Arg Leu | 1040 | 1045 | 1050 |
| Ser Ala Pro Asp Pro Ala Trp Met Ala Arg Leu Ser Leu Pro Leu | 1055 | 1060 | 1065 |
| Thr Thr Asn Tyr Arg Asp Asn Val Ile Ser Pro Asp Ala Ala Ala | 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | 1145 | 1150 | 1155 |

Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr
1160 1165 1170

Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu
1175 1180

<210> 426

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 426

gtaagcacat gcctccagag gtgc 24

<210> 427

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 427

gtgacgtgga tgcttgggat gttg 24

<210> 428

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 428

tggacacctt cagtattgat gccaagacag gccaggatcat tctgcgtcga 50

<210> 429

<211> 2037

<212> DNA

<213> Homo sapiens

<400> 429

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ggcctcgggg agtgggaagt ggaggcagga gccttcctta cacttcgcca 150

tgagtttcct catcgactcc agcatcatga ttacctcca gatactattt 200

tttggatttg ggtggctttt cttcatgcgc caattgttta aagactatga 250

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<210> 430

<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Phe | Leu | Ile | Asp | Ser | Ser | Ile | Met | Ile | Thr | Ser | Gln | Ile | 1 | 5 | 10 | 15 |
| Leu | Phe | Phe | Gly | Phe | Gly | Trp | Leu | Phe | Phe | Met | Arg | Gln | Leu | Phe | 20 | 25 | 30 | |
| Lys | Asp | Tyr | Glu | Ile | Arg | Gln | Tyr | Val | Val | Gln | Val | Ile | Phe | Ser | 35 | 40 | 45 | |
| Val | Thr | Phe | Ala | Phe | Ser | Cys | Thr | Met | Phe | Glu | Leu | Ile | Ile | Phe | 50 | 55 | 60 | |
| Glu | Ile | Leu | Gly | Val | Leu | Asn | Ser | Ser | Ser | Arg | Tyr | Phe | His | Trp | 65 | 70 | 75 | |
| Lys | Met | Asn | Leu | Cys | Val | Ile | Leu | Leu | Ile | Leu | Val | Phe | Met | Val | 80 | 85 | 90 | |
| Pro | Phe | Tyr | Ile | Gly | Tyr | Phe | Ile | Val | Ser | Asn | Ile | Arg | Leu | Leu | 95 | 100 | 105 | |
| His | Lys | Gln | Arg | Leu | Leu | Phe | Ser | Cys | Leu | Leu | Trp | Leu | Thr | Phe | 110 | 115 | 120 | |
| Met | Tyr | Phe | Phe | Trp | Lys | Leu | Gly | Asp | Pro | Phe | Pro | Ile | Leu | Ser | 125 | 130 | 135 | |
| Pro | Lys | His | Gly | Ile | Leu | Ser | Ile | Glu | Gln | Leu | Ile | Ser | Arg | Val | 140 | 145 | 150 | |
| Gly | Val | Ile | Gly | Val | Thr | Leu | Met | Ala | Leu | Leu | Ser | Gly | Phe | Gly | 155 | 160 | 165 | |
| Ala | Val | Asn | Cys | Pro | Tyr | Thr | Tyr | Met | Ser | Tyr | Phe | Leu | Arg | Asn | 170 | 175 | 180 | |
| Val | Thr | Asp | Thr | Asp | Ile | Leu | Ala | Leu | Glu | Arg | Arg | Leu | Leu | Gln | | | | |

| | 185 | 190 | 195 |
|-----------------|---|-----|-----|
| Thr Met Asp Met | Ile Ile Ser Lys Lys Lys Arg Met Ala Met Ala | | |
| | 200 | 205 | 210 |
| Arg Arg Thr Met | Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser | | |
| | 215 | 220 | 225 |
| Gly Phe Trp Gly | Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly | | |
| | 230 | 235 | 240 |
| Ser Glu Asn Leu | Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu | | |
| | 245 | 250 | 255 |
| Glu Leu Ser Arg | Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala | | |
| | 260 | 265 | 270 |
| Thr Lys Glu Arg | Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr | | |
| | 275 | 280 | 285 |
| Phe Asn Phe Leu | Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys | | |
| | 290 | 295 | 300 |
| Ile Phe Met Ala | Thr Ile Asn Ile Val Phe Asp Arg Val Gly Lys | | |
| | 305 | 310 | 315 |
| Thr Asp Pro Val | Thr Arg Gly Ile Glu Ile Thr Val Asn Tyr Leu | | |
| | 320 | 325 | 330 |
| Gly Ile Gln Phe | Asp Val Lys Phe Trp Ser Gln His Ile Ser Phe | | |
| | 335 | 340 | 345 |
| Ile Leu Val Gly | Ile Ile Ile Val Thr Ser Ile Arg Gly Leu Leu | | |
| | 350 | 355 | 360 |
| Ile Thr Leu Thr | Lys Phe Phe Tyr Ala Ile Ser Ser Ser Lys Ser | | |
| | 365 | 370 | 375 |
| Ser Asn Val Ile | Val Leu Leu Leu Ala Gln Ile Met Gly Met Tyr | | |
| | 380 | 385 | 390 |
| Phe Val Ser Ser | Val Leu Leu Ile Arg Met Ser Met Pro Leu Glu | | |
| | 395 | 400 | 405 |
| Tyr Arg Thr Ile | Ile Thr Glu Val Leu Gly Glu Leu Gln Phe Asn | | |
| | 410 | 415 | 420 |
| Phe Tyr His Arg | Trp Phe Asp Val Ile Phe Leu Val Ser Ala Leu | | |
| | 425 | 430 | 435 |
| Ser Ser Ile Leu | Phe Leu Tyr Leu Ala His Lys Gln Ala Pro Glu | | |
| | 440 | 445 | 450 |
| Lys Gln Met Ala | Pro | | |
| | 455 | | |

<211> 407
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<213> Homo sapiens

<220>
<221> unsure
<222> 78, 81, 113, 157, 224, 297
<223> unknown base

<400> 431
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ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200
gagctcatca tctttgaaat cttnngagta ttgaatagca gctcccgtta 250
ttttcactgg aaaatgaacc tgtgtgtaat tctgctgac ctggttntca 300
tggtgccttt ttacattggc tattttattg tgagcaatat ccgactactg 350
cataaacaac gactgctttt ttctgtctc ttatggctga cctttatgta 400
tttccag 407

<210> 432
<211> 457
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434
<223> unknown base

<400> 432
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ctatgagata cgtcagtatg ttgtacaggt gatntnttcc gtgacgtttg 200
cattttcttg caccatgttt gagctcatca tntttgaaat nttaggagta 250
ttgaatagca gctcccgtta ttttactgg aaaatgaacc tgtgtgtaat 300
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tgagcaatat ccgactactg cataaacaac gactgctttt ttctgtctn 400
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cattctc 457

<210> 433

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 433

aagtggagcc ggagccttcc 20

<210> 434

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 434

tcgttggtta tgcagtagtc gg 22

<210> 435

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 435

attgtttaaa gactatgaga tacgtcagta tgtgtacag g 41

<210> 436

<211> 3951

<212> DNA

<213> Homo sapiens

<400> 436

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ttctcacggg ctgtcgcctt caatctggac gtgatgggtg ccttgcgcaa 150

ggagggcgag ccaggcagcc tcttcggctt ctctgtggcc ctgcaccggc 200

agttgcagcc ccgacccag agctggctgc tgggtgggtgc tccccaggcc 250

ctggctcttc ctgggcagca ggcgaatgc actggaggcc tcttcgcttg 300

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<210> 437

<211> 1141

<212> PRT

<213> Homo sapiens

<400> 437

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ala | Arg | Ser | Arg | Asp | Pro | Trp | Gly | Ala | Ser | Gly | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Tyr | Leu | Phe | Gly | Ser | Leu | Leu | Val | Glu | Leu | Leu | Phe | Ser | Arg |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Ala | Phe | Asn | Leu | Asp | Val | Met | Gly | Ala | Leu | Arg | Lys | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Pro | Gly | Ser | Leu | Phe | Gly | Phe | Ser | Val | Ala | Leu | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Gln | Pro | Arg | Pro | Gln | Ser | Trp | Leu | Leu | Val | Gly | Ala | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Leu | Ala | Leu | Pro | Gly | Gln | Gln | Ala | Asn | Arg | Thr | Gly | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Ala | Cys | Pro | Leu | Ser | Leu | Glu | Glu | Thr | Asp | Cys | Tyr | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | |
|-----------------|---------------------|-------------------------|
| Val Asp Ile Asp | Gln Gly Ala Asp Met | Gln Lys Glu Ser Lys Glu |
| 110 | 115 | 120 |
| Asn Gln Trp Leu | Gly Val Ser Val Arg | Ser Gln Gly Pro Gly Gly |
| 125 | 130 | 135 |
| Lys Ile Val Thr | Cys Ala His Arg Tyr | Glu Ala Arg Gln Arg Val |
| 140 | 145 | 150 |
| Asp Gln Ile Leu | Glu Thr Arg Asp Met | Ile Gly Arg Cys Phe Val |
| 155 | 160 | 165 |
| Leu Ser Gln Asp | Leu Ala Ile Arg Asp | Glu Leu Asp Gly Gly Glu |
| 170 | 175 | 180 |
| Trp Lys Phe Cys | Glu Gly Arg Pro Gln | Gly His Glu Gln Phe Gly |
| 185 | 190 | 195 |
| Phe Cys Gln Gln | Gly Thr Ala Ala Ala | Phe Ser Pro Asp Ser His |
| 200 | 205 | 210 |
| Tyr Leu Leu Phe | Gly Ala Pro Gly Thr | Tyr Asn Trp Lys Gly Thr |
| 215 | 220 | 225 |
| Ala Arg Val Glu | Leu Cys Ala Gln Gly | Ser Ala Asp Leu Ala His |
| 230 | 235 | 240 |
| Leu Asp Asp Gly | Pro Tyr Glu Ala Gly | Gly Glu Lys Glu Gln Asp |
| 245 | 250 | 255 |
| Pro Arg Leu Ile | Pro Val Pro Ala Asn | Ser Tyr Phe Gly Phe Ser |
| 260 | 265 | 270 |
| Ile Asp Ser Gly | Lys Gly Leu Val Arg | Ala Glu Glu Leu Ser Phe |
| 275 | 280 | 285 |
| Val Ala Gly Ala | Pro Arg Ala Asn His | Lys Gly Ala Val Val Ile |
| 290 | 295 | 300 |
| Leu Arg Lys Asp | Ser Ala Ser Arg Leu | Val Pro Glu Val Met Leu |
| 305 | 310 | 315 |
| Ser Gly Glu Arg | Leu Thr Ser Gly Phe | Gly Tyr Ser Leu Ala Val |
| 320 | 325 | 330 |
| Ala Asp Leu Asn | Ser Asp Gly Trp Pro | Asp Leu Ile Val Gly Ala |
| 335 | 340 | 345 |
| Pro Tyr Phe Phe | Glu Arg Gln Glu Glu | Leu Gly Gly Ala Val Tyr |
| 350 | 355 | 360 |
| Val Tyr Leu Asn | Gln Gly Gly His Trp | Ala Gly Ile Ser Pro Leu |
| 365 | 370 | 375 |
| Arg Leu Cys Gly | Ser Pro Asp Ser Met | Phe Gly Ile Ser Leu Ala |
| 380 | 385 | 390 |

| | | | | |
|-----------------|---|-----|-----|-----|
| Val Leu Gly Asp | Leu Asn Gln Asp Gly Phe Pro Asp Ile Ala Val | 395 | 400 | 405 |
| Gly Ala Pro Phe | Asp Gly Asp Gly Lys Val Phe Ile Tyr His Gly | 410 | 415 | 420 |
| Ser Ser Leu Gly | Val Val Ala Lys Pro Ser Gln Val Leu Glu Gly | 425 | 430 | 435 |
| Glu Ala Val Gly | Ile Lys Ser Phe Gly Tyr Ser Leu Ser Gly Ser | 440 | 445 | 450 |
| Leu Asp Met Asp | Gly Asn Gln Tyr Pro Asp Leu Leu Val Gly Ser | 455 | 460 | 465 |
| Leu Ala Asp Thr | Ala Val Leu Phe Arg Ala Arg Pro Ile Leu His | 470 | 475 | 480 |
| Val Ser His Glu | Val Ser Ile Ala Pro Arg Ser Ile Asp Leu Glu | 485 | 490 | 495 |
| Gln Pro Asn Cys | Ala Gly Gly His Ser Val Cys Val Asp Leu Arg | 500 | 505 | 510 |
| Val Cys Phe Ser | Tyr Ile Ala Val Pro Ser Ser Tyr Ser Pro Thr | 515 | 520 | 525 |
| Val Ala Leu Asp | Tyr Val Leu Asp Ala Asp Thr Asp Arg Arg Leu | 530 | 535 | 540 |
| Arg Gly Gln Val | Pro Arg Val Thr Phe Leu Ser Arg Asn Leu Glu | 545 | 550 | 555 |
| Glu Pro Lys His | Gln Ala Ser Gly Thr Val Trp Leu Lys His Gln | 560 | 565 | 570 |
| His Asp Arg Val | Cys Gly Asp Ala Met Phe Gln Leu Gln Glu Asn | 575 | 580 | 585 |
| Val Lys Asp Lys | Leu Arg Ala Ile Val Val Thr Leu Ser Tyr Ser | 590 | 595 | 600 |
| Leu Gln Thr Pro | Arg Leu Arg Arg Gln Ala Pro Gly Gln Gly Leu | 605 | 610 | 615 |
| Pro Pro Val Ala | Pro Ile Leu Asn Ala His Gln Pro Ser Thr Gln | 620 | 625 | 630 |
| Arg Ala Glu Ile | His Phe Leu Lys Gln Gly Cys Gly Glu Asp Lys | 635 | 640 | 645 |
| Ile Cys Gln Ser | Asn Leu Gln Leu Val His Ala Arg Phe Cys Thr | 650 | 655 | 660 |
| Arg Val Ser Asp | Thr Glu Phe Gln Pro Leu Pro Met Asp Val Asp | 665 | 670 | 675 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gly Thr Thr Ala | Leu Phe Ala Leu Ser | Gly Gln Pro Val Ile Gly | 680 | 685 | 690 |
| Leu Glu Leu Met | Val Thr Asn Leu Pro | Ser Asp Pro Ala Gln Pro | 695 | 700 | 705 |
| Gln Ala Asp Gly | Asp Asp Ala His Glu | Ala Gln Leu Leu Val Met | 710 | 715 | 720 |
| Leu Pro Asp Ser | Leu His Tyr Ser Gly | Val Arg Ala Leu Asp Pro | 725 | 730 | 735 |
| Ala Glu Lys Pro | Leu Cys Leu Ser Asn | Glu Asn Ala Ser His Val | 740 | 745 | 750 |
| Glu Cys Glu Leu | Gly Asn Pro Met Lys | Arg Gly Ala Gln Val Thr | 755 | 760 | 765 |
| Phe Tyr Leu Ile | Leu Ser Thr Ser Gly | Ile Ser Ile Glu Thr Thr | 770 | 775 | 780 |
| Glu Leu Glu Val | Glu Leu Leu Leu Ala | Thr Ile Ser Glu Gln Glu | 785 | 790 | 795 |
| Leu His Pro Val | Ser Ala Arg Ala Arg | Val Phe Ile Glu Leu Pro | 800 | 805 | 810 |
| Leu Ser Ile Ala | Gly Met Ala Ile Pro | Gln Gln Leu Phe Phe Ser | 815 | 820 | 825 |
| Gly Val Val Arg | Gly Glu Arg Ala Met | Gln Ser Glu Arg Asp Val | 830 | 835 | 840 |
| Gly Ser Lys Val | Lys Tyr Glu Val Thr | Val Ser Asn Gln Gly Gln | 845 | 850 | 855 |
| Ser Leu Arg Thr | Leu Gly Ser Ala Phe | Leu Asn Ile Met Trp Pro | 860 | 865 | 870 |
| His Glu Ile Ala | Asn Gly Lys Trp Leu | Leu Tyr Pro Met Gln Val | 875 | 880 | 885 |
| Glu Leu Glu Gly | Gly Gln Gly Pro Gly | Gln Lys Gly Leu Cys Ser | 890 | 895 | 900 |
| Pro Arg Pro Asn | Ile Leu His Leu Asp | Val Asp Ser Arg Asp Arg | 905 | 910 | 915 |
| Arg Arg Arg Glu | Leu Glu Pro Pro Glu | Gln Gln Glu Pro Gly Glu | 920 | 925 | 930 |
| Arg Gln Glu Pro | Ser Met Ser Trp Trp | Pro Val Ser Ser Ala Glu | 935 | 940 | 945 |
| Lys Lys Lys Asn | Ile Thr Leu Asp Cys | Ala Arg Gly Thr Ala Asn | 950 | 955 | 960 |

| | | | |
|---|------|------|------|
| Cys Val Val Phe Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala | 965 | 970 | 975 |
| Val Leu His Val Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu | 980 | 985 | 990 |
| Glu Tyr Ser Ala Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn | 995 | 1000 | 1005 |
| Ile Thr Val Lys Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala | 1010 | 1015 | 1020 |
| Ser Thr Val Ile Pro Val Met Val Tyr Leu Asp Pro Met Ala Val | 1025 | 1030 | 1035 |
| Val Ala Glu Gly Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu | 1040 | 1045 | 1050 |
| Ala Gly Leu Leu Val Leu Ala Leu Leu Val Leu Leu Leu Trp Lys | 1055 | 1060 | 1065 |
| Met Gly Phe Phe Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro | 1070 | 1075 | 1080 |
| Gln Tyr His Ala Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe | 1085 | 1090 | 1095 |
| Lys Glu Glu Lys Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser | 1100 | 1105 | 1110 |
| Pro Arg Arg Glu Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp | 1115 | 1120 | 1125 |
| Gly His Pro Glu Leu Gly Pro Asp Gly His Pro Gly Pro Gly Thr | 1130 | 1135 | 1140 |

Ala

<210> 438

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 438

ggctgacacc gcagtgcctct tcag 24

<210> 439

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 439

gctgctgggg actgcaatgt agct 24

<210> 440

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 440

catcctccat gtctcccatg aggtctctat tgctccacga agcatc 46

<210> 441

<211> 1964

<212> DNA

<213> Homo sapiens

<400> 441

cgcgcggggc gcagggagct gaggggacgg ctcgagacgg cggcgcgtgc 50

agcagctcca gaaagcagcg agttggcaga gcagggctgc atttccagca 100

ggagctgcga gcacagtgtt ggctcacaac aagatgtctc aggtgtcagc 150

cgtactgtgt gtgtgtgcag ccgcttggtg cagtcagtct ctcgcagctg 200

ccgcggcggg ggctgcagcc ggggggcggg cggacggcgg taattttctg 250

gatgataaac aatgggtcac cacaatctct cagtatgaca aggaagtcgg 300

acagtgaac aaattccgag acgaagtaga ggatgattat ttccgcactt 350

ggagtccagg aaaacccttc gatcaggctt tagatccagc taaggatcca 400

tgcttaaaga tgaaatgtag tcgccataaa gtatgcattg ctcaagattc 450

tcagactgca gtctgcatta gtcaccggag gcttacacac aggatgaaag 500

aagcaggagt agaccatagg cagtggaggg gtcccatatt atccacctgc 550

aagcagtgcc cagtgggtcta tcccagccct gtttgtggtt cagatggtca 600

tacctactct ttccagtgc aactagaata tcaggcatgt gtcttaggaa 650

aacagatctc agtcaaatgt gaaggacatt gcccatgtcc ttcagataag 700

cccaccagta caagcagaaa tgtaagaga gcatgcagtg acctggagtt 750

caggggaagtg gcaaacagat tgcgggactg gttcaaggcc cttcatgaaa 800

gtggaagtca aaacaagaag acaaaaacat tgctgaggcc tgagagaagc 850

agattcgata ccagcatctt gccaatgtgc aaggactcac ttggctggat 900

gtttaacaga cttgatacaa actatgacct gctattggac cagtcagagc 950
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 aattctaagt gaaatttaaa ataaataaat ttttaatgac ctgggtctta 1850
 aggatttagg aaaaatagc atgctttaat tgcatttcca aagtagcatc 1900
 ttgctagacc tagatgagtc aggataacag agagatacca catgactcca 1950
 aaaaaaaaaa aaaa 1964

<210> 442

<211> 436

<212> PRT

<213> Homo sapiens

<400> 442

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Lys | Val | Ser | Ala | Val | Leu | Cys | Val | Cys | Ala | Ala | Ala | Trp |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Gln | Ser | Leu | Ala | Ala | Ala | Ala | Ala | Val | Ala | Ala | Ala | Gly |
| | | | | 20 | | | | 25 | | | | | | 30 |

Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu

| 35 | | | | | | | | | | 40 | | | | | 45 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Thr | Thr | Ile | Ser | Gln | Tyr | Asp | Lys | Glu | Val | Gly | Gln | Trp | Asn | Lys | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Phe | Arg | Asp | Glu | Val | Glu | Asp | Asp | Tyr | Phe | Arg | Thr | Trp | Ser | Pro | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Gly | Lys | Pro | Phe | Asp | Gln | Ala | Leu | Asp | Pro | Ala | Lys | Asp | Pro | Cys | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Leu | Lys | Met | Lys | Cys | Ser | Arg | His | Lys | Val | Cys | Ile | Ala | Gln | Asp | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ser | Gln | Thr | Ala | Val | Cys | Ile | Ser | His | Arg | Arg | Leu | Thr | His | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Met | Lys | Glu | Ala | Gly | Val | Asp | His | Arg | Gln | Trp | Arg | Gly | Pro | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Leu | Ser | Thr | Cys | Lys | Gln | Cys | Pro | Val | Val | Tyr | Pro | Ser | Pro | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Cys | Gly | Ser | Asp | Gly | His | Thr | Tyr | Ser | Phe | Gln | Cys | Lys | Leu | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Tyr | Gln | Ala | Cys | Val | Leu | Gly | Lys | Gln | Ile | Ser | Val | Lys | Cys | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | His | Cys | Pro | Cys | Pro | Ser | Asp | Lys | Pro | Thr | Ser | Thr | Ser | Arg | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Asn | Val | Lys | Arg | Ala | Cys | Ser | Asp | Leu | Glu | Phe | Arg | Glu | Val | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Asn | Arg | Leu | Arg | Asp | Trp | Phe | Lys | Ala | Leu | His | Glu | Ser | Gly | Ser | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Gln | Asn | Lys | Lys | Thr | Lys | Thr | Leu | Leu | Arg | Pro | Glu | Arg | Ser | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Asp | Thr | Ser | Ile | Leu | Pro | Ile | Cys | Lys | Asp | Ser | Leu | Gly | Trp | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Met | Phe | Asn | Arg | Leu | Asp | Thr | Asn | Tyr | Asp | Leu | Leu | Leu | Asp | Gln | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ser | Glu | Leu | Arg | Ser | Ile | Tyr | Leu | Asp | Lys | Asn | Glu | Gln | Cys | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Ala | Phe | Phe | Asn | Ser | Cys | Asp | Thr | Tyr | Lys | Asp | Ser | Leu | Ile | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Asn | Asn | Glu | Trp | Cys | Tyr | Cys | Phe | Gln | Arg | Gln | Gln | Asp | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Pro | Cys | Gln | Thr | Glu | Leu | Ser | Asn | Ile | Gln | Lys | Arg | Gln | Gly | Val | | | | | |

| | 320 | 325 | 330 |
|---|-----|-----|-----|
| Lys Lys Leu Leu Gly Gln Tyr Ile Pro Leu Cys Asp Glu Asp Gly | 335 | 340 | 345 |
| Tyr Tyr Lys Pro Thr Gln Cys His Gly Ser Val Gly Gln Cys Trp | 350 | 355 | 360 |
| Cys Val Asp Arg Tyr Gly Asn Glu Val Met Gly Ser Arg Ile Asn | 365 | 370 | 375 |
| Gly Val Ala Asp Cys Ala Ile Asp Phe Glu Ile Ser Gly Asp Phe | 380 | 385 | 390 |
| Ala Ser Gly Asp Phe His Glu Trp Thr Asp Asp Glu Asp Asp Glu | 395 | 400 | 405 |
| Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu Asp Asp Asp Glu | 410 | 415 | 420 |
| Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His Asp Val Tyr | 425 | 430 | 435 |

Ile

<210> 443

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 443

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<210> 444

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 444

catcatggtc atcaccacca tcatcatc 28

<210> 445

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 445

ggttactaca agccaacaca atgtcatggc agtggttgac agtgctgg 48

<210> 446

<211> 3617

<212> DNA

<213> Homo sapiens

<400> 446

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gctctgcctc cgggtgctgct gcctggggcg gccggcttca caccttccct 200
cgatagcgac ttcaccttta cccttcccgc cggccagaag gagtgcttct 250
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gatggagcag gattagatat tgatttccat cttgcctctc cagaaggcaa 350
aaccttagtt tttgaacaaa gaaaatcaga tggagttcac actgtagaga 400
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 gtacaataat gcacaatcag tgttgctcaa actgctttat acttataaac 3550
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 aaattatcaa aggaaaa 3617

<210> 447

<211> 229

<212> PRT

<213> Homo sapiens

<400> 447

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Asp | Lys | Ile | Trp | Leu | Pro | Phe | Pro | Val | Leu | Leu | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Pro | Pro | Val | Leu | Leu | Pro | Gly | Ala | Ala | Gly | Phe | Thr | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Asp | Ser | Asp | Phe | Thr | Phe | Thr | Leu | Pro | Ala | Gly | Gln | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Cys | Phe | Tyr | Gln | Pro | Met | Pro | Leu | Lys | Ala | Ser | Leu | Glu | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | |
|---|-----|-----|-----|
| Glu Tyr Gln Val Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His | 65 | 70 | 75 |
| Leu Ala Ser Pro Glu Gly Lys Thr Leu Val Phe Glu Gln Arg Lys | 80 | 85 | 90 |
| Ser Asp Gly Val His Thr Val Glu Thr Glu Val Gly Asp Tyr Met | 95 | 100 | 105 |
| Phe Cys Phe Asp Asn Thr Phe Ser Thr Ile Ser Glu Lys Val Ile | 110 | 115 | 120 |
| Phe Phe Glu Leu Ile Leu Asp Asn Met Gly Glu Gln Ala Gln Glu | 125 | 130 | 135 |
| Gln Glu Asp Trp Lys Lys Tyr Ile Thr Gly Thr Asp Ile Leu Asp | 140 | 145 | 150 |
| Met Lys Leu Glu Asp Ile Leu Glu Ser Ile Asn Ser Ile Lys Ser | 155 | 160 | 165 |
| Arg Leu Ser Lys Ser Gly His Ile Gln Ile Leu Leu Arg Ala Phe | 170 | 175 | 180 |
| Glu Ala Arg Asp Arg Asn Ile Gln Glu Ser Asn Phe Asp Arg Val | 185 | 190 | 195 |
| Asn Phe Trp Ser Met Val Asn Leu Val Val Met Val Val Val Ser | 200 | 205 | 210 |
| Ala Ile Gln Val Tyr Met Leu Lys Ser Leu Phe Glu Asp Lys Arg | 215 | 220 | 225 |

Lys Ser Arg Thr

<210> 448

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 448

cccagcaggg ctgggcgaca aga 23

<210> 449

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 449

gtcttccagt ttcatatcca ata 23

<210> 450

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 450

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<210> 451

<211> 859

<212> DNA

<213> Homo sapiens

<400> 451

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tcaggttcaa ggtgaagaaa ccagaagga actgccctct ccacggatca 200
gctgtcccaa aggctccaag gcctatggct cccctgcta tgccttgttt 250
ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300
ctctgaaaaa ctggtgtctg tgctcagtgg ggctgagga tccttcgtgt 350
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aaaaaaaaa 859

<210> 452

<211> 175

<212> PRT

<213> Homo sapiens

<400> 452

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Pro | Pro | Met | Ala | Leu | Pro | Ser | Val | Ser | Trp | Met | Leu | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Cys | Leu | Ile | Leu | Leu | Cys | Gln | Val | Gln | Gly | Glu | Glu | Thr | Gln | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Lys | Glu | Leu | Pro | Ser | Pro | Arg | Ile | Ser | Cys | Pro | Lys | Gly | Ser | Lys | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ala | Tyr | Gly | Ser | Pro | Cys | Tyr | Ala | Leu | Phe | Leu | Ser | Pro | Lys | Ser | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Trp | Met | Asp | Ala | Asp | Leu | Ala | Cys | Gln | Lys | Arg | Pro | Ser | Gly | Lys | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Leu | Val | Ser | Val | Leu | Ser | Gly | Ala | Glu | Gly | Ser | Phe | Val | Ser | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Val | Arg | Ser | Ile | Ser | Asn | Ser | Tyr | Ser | Tyr | Ile | Trp | Ile | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | His | Asp | Pro | Thr | Gln | Gly | Ser | Glu | Pro | Asp | Gly | Asp | Gly | Trp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Glu | Trp | Ser | Ser | Thr | Asp | Val | Met | Asn | Tyr | Phe | Ala | Trp | Glu | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Pro | Ser | Thr | Ile | Leu | Asn | Pro | Gly | His | Cys | Gly | Ser | Leu | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Ser | Thr | Gly | Phe | Leu | Lys | Trp | Lys | Asp | Tyr | Asn | Cys | Asp | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Leu | Pro | Tyr | Val | Cys | Lys | Phe | Lys | Asp | | | | | | |
| | | | | 170 | | | | | 175 | | | | | | |

<210> 453

<211> 550

<212> DNA

<213> Homo sapiens

<400> 453

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ccgggagata gtgtaccct tccaggggga ctccacggtg accaagtcct 300

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tctgaacagc ctccactgcg gggccctcac gctcctccca ctcttgagcc 450
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<210> 454

<211> 125

<212> PRT

<213> Homo sapiens

<400> 454

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Thr | Arg | Leu | Ala | Leu | Leu | Ala | Leu | Val | Leu | Ala | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Glu | Leu | Ala | Pro | Ala | Leu | Arg | Cys | Tyr | Val | Cys | Pro | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Thr | Gly | Val | Ser | Asp | Cys | Val | Thr | Ile | Ala | Thr | Cys | Thr | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Glu | Thr | Met | Cys | Lys | Thr | Thr | Leu | Tyr | Ser | Arg | Glu | Ile | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Pro | Phe | Gln | Gly | Asp | Ser | Thr | Val | Thr | Lys | Ser | Cys | Ala | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Cys | Lys | Pro | Ser | Asp | Val | Asp | Gly | Ile | Gly | Gln | Thr | Leu | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Cys | Cys | Asn | Thr | Glu | Leu | Cys | Asn | Val | Asp | Gly | Ala | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Asn | Ser | Leu | His | Cys | Gly | Ala | Leu | Thr | Leu | Leu | Pro | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | |
|-----|-----|-----|-----|-----|
| Leu | Ser | Leu | Arg | Leu |
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<210> 455

<211> 1518

<212> DNA

<213> Homo sapiens

<400> 455

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gcgcagcggg agctaccggg gtctttgtcg cgatggtagc ggcggctctc 200

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 aataagtacc agaccattga caactaccag ccgtaccogt gcgcagagga 400
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 atgtaacatg aaaatactag cttatfffct gaaatgtact atcttaatgc 1450
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<210> 456

<211> 266

<212> PRT

<213> Homo sapiens

<400> 456

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Met | Ala | Leu | Gly | Ala | Ala | Gly | Ala | Thr | Arg | Val | Phe | Val | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Met | Val | Ala | Ala | Ala | Leu | Gly | Gly | His | Pro | Leu | Leu | Gly | Val | Ser | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ala | Thr | Leu | Asn | Ser | Val | Leu | Asn | Ser | Asn | Ala | Ile | Lys | Asn | Leu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Pro | Pro | Pro | Leu | Gly | Gly | Ala | Ala | Gly | His | Pro | Gly | Ser | Ala | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ser | Ala | Ala | Pro | Gly | Ile | Leu | Tyr | Pro | Gly | Gly | Asn | Lys | Tyr | Gln | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Thr | Ile | Asp | Asn | Tyr | Gln | Pro | Tyr | Pro | Cys | Ala | Glu | Asp | Glu | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Gly | Thr | Asp | Glu | Tyr | Cys | Ala | Ser | Pro | Thr | Arg | Gly | Gly | Asp | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Gly | Val | Gln | Ile | Cys | Leu | Ala | Cys | Arg | Lys | Arg | Arg | Lys | Arg | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Cys | Met | Arg | His | Ala | Met | Cys | Cys | Pro | Gly | Asn | Tyr | Cys | Lys | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Ile | Cys | Val | Ser | Ser | Asp | Gln | Asn | His | Phe | Arg | Gly | Glu | Ile | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Glu | Glu | Thr | Ile | Thr | Glu | Ser | Phe | Gly | Asn | Asp | His | Ser | Thr | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Asp | Gly | Tyr | Ser | Arg | Arg | Thr | Thr | Leu | Ser | Ser | Lys | Met | Tyr | His | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Lys | Gly | Gln | Glu | Gly | Ser | Val | Cys | Leu | Arg | Ser | Ser | Asp | Cys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ser | Gly | Leu | Cys | Cys | Ala | Arg | His | Phe | Trp | Ser | Lys | Ile | Cys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Pro | Val | Leu | Lys | Glu | Gly | Gln | Val | Cys | Thr | Lys | His | Arg | Arg | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Lys | Gly | Ser | His | Gly | Leu | Glu | Ile | Phe | Gln | Arg | Cys | Tyr | Cys | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Glu | Gly | Leu | Ser | Cys | Arg | Ile | Gln | Lys | Asp | His | His | Gln | Ala | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Ser | Ser | Arg | Leu | His | Thr | Cys | Gln | Arg | His | | | | | |
| | | | | 260 | | | | | 265 | | | | | | |

<210> 457
<211> 638
<212> DNA
<213> Homo sapiens

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<222> 30, 123, 133, 139, 180, 214, 259, 282, 308, 452, 467, 471, 473,
509, 556
<223> unknown base

<400> 457
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gcgcagcggg agctaaccgc gttttttgtn gcgatggtag cggcggtttt 200
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<210> 458
<211> 4040
<212> DNA
<213> Homo sapiens

<400> 458
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<210> 459

<211> 747

<212> PRT

<213> Homo sapiens

<400> 459

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Val | Trp | Leu | Asn | Lys | Asp | Asp | Tyr | Ile | Arg | Asp | Leu | Lys |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Ile | Leu | Cys | Phe | Leu | Ile | Val | Tyr | Met | Ala | Ile | Leu | Val |
| | | | 20 | | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Asp | Gln | Asp | Phe | Tyr | Ser | Leu | Leu | Gly | Val | Ser | Lys | Thr |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Ser | Arg | Glu | Ile | Arg | Gln | Ala | Phe | Lys | Lys | Leu | Ala | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | His | Pro | Asp | Lys | Asn | Pro | Asn | Asn | Pro | Asn | Ala | His | Gly |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | |
|---|-----|-----|-----|
| Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu | 80 | 85 | 90 |
| Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu | 95 | 100 | 105 |
| Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr | 110 | 115 | 120 |
| Asp Phe Gly Ile Tyr Asp Asp Asp Pro Glu Ile Ile Thr Leu Glu | 125 | 130 | 135 |
| Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe | 140 | 145 | 150 |
| Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala | 155 | 160 | 165 |
| Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg | 170 | 175 | 180 |
| Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met | 185 | 190 | 195 |
| Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly | 200 | 205 | 210 |
| Met Ala Pro Val Lys Tyr His Gly Asp Arg Ser Lys Glu Ser Leu | 215 | 220 | 225 |
| Val Ser Phe Ala Met Gln His Val Arg Ser Thr Val Thr Glu Leu | 230 | 235 | 240 |
| Trp Thr Gly Asn Phe Val Asn Ser Ile Gln Thr Ala Phe Ala Ala | 245 | 250 | 255 |
| Gly Ile Gly Trp Leu Ile Thr Phe Cys Ser Lys Gly Gly Asp Cys | 260 | 265 | 270 |
| Leu Thr Ser Gln Thr Arg Leu Arg Leu Ser Gly Met Leu Phe Leu | 275 | 280 | 285 |
| Asn Ser Leu Asp Ala Lys Glu Ile Tyr Leu Glu Val Ile His Asn | 290 | 295 | 300 |
| Leu Pro Asp Phe Glu Leu Leu Ser Ala Asn Thr Leu Glu Asp Arg | 305 | 310 | 315 |
| Leu Ala His His Arg Trp Leu Leu Phe Phe His Phe Gly Lys Asn | 320 | 325 | 330 |
| Glu Asn Ser Asn Asp Pro Glu Leu Lys Lys Leu Lys Thr Leu Leu | 335 | 340 | 345 |
| Lys Asn Asp His Ile Gln Val Gly Arg Phe Asp Cys Ser Ser Ala | 350 | 355 | 360 |

| | | | |
|---|-----|-----|-----|
| Pro Asp Ile Cys Ser Asn Leu Tyr Val Phe Gln Pro Ser Leu Ala | 365 | 370 | 375 |
| Val Phe Lys Gly Gln Gly Thr Lys Glu Tyr Glu Ile His His Gly | 380 | 385 | 390 |
| Lys Lys Ile Leu Tyr Asp Ile Leu Ala Phe Ala Lys Glu Ser Val | 395 | 400 | 405 |
| Asn Ser His Val Thr Thr Leu Gly Pro Gln Asn Phe Pro Ala Asn | 410 | 415 | 420 |
| Asp Lys Glu Pro Trp Leu Val Asp Phe Phe Ala Pro Trp Cys Pro | 425 | 430 | 435 |
| Pro Cys Arg Ala Leu Leu Pro Glu Leu Arg Arg Ala Ser Asn Leu | 440 | 445 | 450 |
| Leu Tyr Gly Gln Leu Lys Phe Gly Thr Leu Asp Cys Thr Val His | 455 | 460 | 465 |
| Glu Gly Leu Cys Asn Met Tyr Asn Ile Gln Ala Tyr Pro Thr Thr | 470 | 475 | 480 |
| Val Val Phe Asn Gln Ser Asn Ile His Glu Tyr Glu Gly His His | 485 | 490 | 495 |
| Ser Ala Glu Gln Ile Leu Glu Phe Ile Glu Asp Leu Met Asn Pro | 500 | 505 | 510 |
| Ser Val Val Ser Leu Thr Pro Thr Thr Phe Asn Glu Leu Val Thr | 515 | 520 | 525 |
| Gln Arg Lys His Asn Glu Val Trp Met Val Asp Phe Tyr Ser Pro | 530 | 535 | 540 |
| Trp Cys His Pro Cys Gln Val Leu Met Pro Glu Trp Lys Arg Met | 545 | 550 | 555 |
| Ala Arg Thr Leu Thr Gly Leu Ile Asn Val Gly Ser Ile Asp Cys | 560 | 565 | 570 |
| Gln Gln Tyr His Ser Phe Cys Ala Gln Glu Asn Val Gln Arg Tyr | 575 | 580 | 585 |
| Pro Glu Ile Arg Phe Phe Pro Pro Lys Ser Asn Lys Ala Tyr Gln | 590 | 595 | 600 |
| Tyr His Ser Tyr Asn Gly Trp Asn Arg Asp Ala Tyr Ser Leu Arg | 605 | 610 | 615 |
| Ile Trp Gly Leu Gly Phe Leu Pro Gln Val Ser Thr Asp Leu Thr | 620 | 625 | 630 |
| Pro Gln Thr Phe Ser Glu Lys Val Leu Gln Gly Lys Asn His Trp | 635 | 640 | 645 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu | | | |
| | | | | 740 | | | | | 745 | | | | | |

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 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 460
 actccccagg ctgttcacac tgcc 24

<210> 461
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 461
 gatcagccag ccaataccag cagc 24

<210> 462
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 462
 gtggtgatga tagaatgctt tgccgaatga aaggagtcaa cagctatccc 50

<210> 463
 <211> 1818
 <212> DNA

<213> Homo sapiens

<400> 463

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ggacagagca aagccatgaa catcatccta gaaatccttc tgcttctgat 100
caccatcatc tactcctact tggagtcggt ggtgaagttt ttcattcctc 150
agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200
catggaatag gcaggcagac tacttatgaa ttgcaaaac gacagagcat 250
attggttctg tgggatatta ataagcgcg tgtggaggaa actgcagctg 300
agtgccgaaa actaggcgctc actgcgcatg cgtatgtggt agactgcagc 350
aacagagaag agatctatcg ctctctaaat caggtgaaga aagaagtggg 400
tgatgtaaca atcgtggtga ataatgctgg gacagtatat ccagccgac 450
ttctcagcac caaggatgaa gagattacca agacatttga ggtcaacatc 500
ctaggacatt tttggatcac aaaagcactt cttccatcga tgatggagag 550
aaatcatggc cacatcgtca cagtggcttc agtgtgcggc cacgaaggga 600
ttccttacct catcccatat tgttccagca aatttgccgc tgttggtttt 650
cacagaggtc tgacatcaga acttcaggcc ttgggaaaaa ctggtatcaa 700
aacctcatgt ctctgcccag tttttgtgaa tactgggttc accaaaaatc 750
caagcacaag attatggcct gtattggaga cagatgaagt cgtaagaagt 800
ctgatagatg gaatacttac caataagaaa atgatttttg ttccatcgta 850
tatcaatatc tttctgagac tacagaagtt tcttcctgaa cgcgcctcag 900
cgatttttaa tcgtatgcag aatattcaat ttgaagcagt ggttggccac 950
aaaatcaaaa tgaaatgaat aaataagctc cagccagaga tgtatgcatg 1000
ataatgatat gaatagtttc gaatcaatgc tgcaaagctt tatttcacat 1050
tttttcagtc ctgataatat taaaaacatt ggtttggcac tagcagcagt 1100
caaacgaaca agattaatta cctgtcttcc tgtttctcaa gaatatttac 1150
gtagtttttc ataggtctgt ttttccttcc atgcctctta aaaacttctg 1200
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catttaaagg tggacaaaag ctacctccct aaaagtaaata acaaagagaa 1300
cttatttaca caggaaggt ttaagactgt tcaagtagca ttccaatctg 1350

tagccatgcc acagaatatc aacaagaaca cagaatgagt gcacagctaa 1400
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attcagcatt tgaaagattt ccctagcctc ttcctttttc attagcccaa 1500
aacggtgcaa ctctattctg gactttatta cttgattctg tcttctgtat 1550
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<210> 464
<211> 300
<212> PRT
<213> Homo sapiens

<400> 464

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ile | Ile | Leu | Glu | Ile | Leu | Leu | Leu | Ile | Thr | Ile | Ile | |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Tyr | Ser | Tyr | Leu | Glu | Ser | Leu | Val | Lys | Phe | Phe | Ile | Pro | Gln | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly |

| | | |
|---|-----|-----|
| 155 | 160 | 165 |
| His Ile Val Thr Val Ala Ser Val Cys Gly His Glu Gly Ile Pro | | |
| 170 | 175 | 180 |
| Tyr Leu Ile Pro Tyr Cys Ser Ser Lys Phe Ala Ala Val Gly Phe | | |
| 185 | 190 | 195 |
| His Arg Gly Leu Thr Ser Glu Leu Gln Ala Leu Gly Lys Thr Gly | | |
| 200 | 205 | 210 |
| Ile Lys Thr Ser Cys Leu Cys Pro Val Phe Val Asn Thr Gly Phe | | |
| 215 | 220 | 225 |
| Thr Lys Asn Pro Ser Thr Arg Leu Trp Pro Val Leu Glu Thr Asp | | |
| 230 | 235 | 240 |
| Glu Val Val Arg Ser Leu Ile Asp Gly Ile Leu Thr Asn Lys Lys | | |
| 245 | 250 | 255 |
| Met Ile Phe Val Pro Ser Tyr Ile Asn Ile Phe Leu Arg Leu Gln | | |
| 260 | 265 | 270 |
| Lys Phe Leu Pro Glu Arg Ala Ser Ala Ile Leu Asn Arg Met Gln | | |
| 275 | 280 | 285 |
| Asn Ile Gln Phe Glu Ala Val Val Gly His Lys Ile Lys Met Lys | | |
| 290 | 295 | 300 |

<210> 465

<211> 1547

<212> DNA

<213> Homo sapiens

<400> 465

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gagagggccc agcccgcccc gggcaggatg accaaggccc ggctgttccg 150

gctgtggctg gtgctggggt cgggtgttcat gatcctgctg atcatcgtgt 200

actgggacag cgcaggcgcc gcgcacttct acttgcacac gtccttctct 250

aggccgcaca cggggccgcc gctgcccacg cccgggcccg acagggacag 300

ggagctcacg gccgactccg atgtcgacga gtttctggac aagtttctca 350

gtgctggcgt gaagcagagc gaccttccca gaaaggagac ggagcagccg 400

cctgcgccgg ggagcatgga ggagagcgtg agaggctacg actggtcccc 450

gcgcgacgcc cggcgcagcc cagaccaggg ccggcagcag gcggagcgga 500

ggagcgtgct gcggggcttc tgcgccaact ccagcctggc cttccccacc 550

aaggagcgcg cattcgacga catccccaac tcggagctga gccacctgat 600
cgtggacgac cggcacgggg ccatctactg ctacgtgccc aaggtggcct 650
gcaccaactg gaagcgcgtg atgatcgtgc tgagcggaag cctgctgcac 700
cgcggtgcgc cctaccgca cccgctgcgc atcccgcgcg agcacgtgca 750
caacgccagc gcgcacctga ccttcaacaa gttctggcgc cgctacggga 800
agctctcccg ccacctcatg aaggtcaagc tcaagaagta caccaagttc 850
ctcttcgtgc gcgaccctt cgtgcgcctg atctccgct tccgcagcaa 900
gttcgagctg gagaacgagg agttctaccg caagttcgcc gtgcccattg 950
tgcggtctga cgccaaccac accagcctgc ccgcctcggc gcgcgaggcc 1000
ttccgcgctg gcctcaagggt gtccttcgcc aacttcatcc agtacctgct 1050
ggaccgcgac acggagaagc tggcgccctt caacgagcac tggcggcagg 1100
tgtaccgct ctgccaccg tgccagatcg actacgactt cgtggggaag 1150
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ctgtataaac tctacgaggc cgactttgtt ctcttcggct accccaagcc 1350
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cctggaacct gacgcacgcg cactccagtt tttttatgac ctacgatttt 1450
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atcgatattg ttttttaaga ttaatatatt tcaggtattt aatacga 1547

<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Lys | Ala | Arg | Leu | Phe | Arg | Leu | Trp | Leu | Val | Leu | Gly | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Met | Ile | Leu | Leu | Ile | Ile | Val | Tyr | Trp | Asp | Ser | Ala | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | His | Phe | Tyr | Leu | His | Thr | Ser | Phe | Ser | Arg | Pro | His | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Pro | Leu | Pro | Thr | Pro | Gly | Pro | Asp | Arg | Asp | Arg | Glu | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ala | Asp | Ser | Asp | Val | Asp | Glu | Phe | Leu | Asp | Lys | Phe | Leu | Ser | |
| | | | | 65 | | | | | 70 | | | | | | 75 |
| Ala | Gly | Val | Lys | Gln | Ser | Asp | Leu | Pro | Arg | Lys | Glu | Thr | Glu | Gln | |
| | | | | 80 | | | | | 85 | | | | | | 90 |
| Pro | Pro | Ala | Pro | Gly | Ser | Met | Glu | Glu | Ser | Val | Arg | Gly | Tyr | Asp | |
| | | | | 95 | | | | | 100 | | | | | | 105 |
| Trp | Ser | Pro | Arg | Asp | Ala | Arg | Arg | Ser | Pro | Asp | Gln | Gly | Arg | Gln | |
| | | | | 110 | | | | | 115 | | | | | | 120 |
| Gln | Ala | Glu | Arg | Arg | Ser | Val | Leu | Arg | Gly | Phe | Cys | Ala | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | | 135 |
| Ser | Leu | Ala | Phe | Pro | Thr | Lys | Glu | Arg | Ala | Phe | Asp | Asp | Ile | Pro | |
| | | | | 140 | | | | | 145 | | | | | | 150 |
| Asn | Ser | Glu | Leu | Ser | His | Leu | Ile | Val | Asp | Asp | Arg | His | Gly | Ala | |
| | | | | 155 | | | | | 160 | | | | | | 165 |
| Ile | Tyr | Cys | Tyr | Val | Pro | Lys | Val | Ala | Cys | Thr | Asn | Trp | Lys | Arg | |
| | | | | 170 | | | | | 175 | | | | | | 180 |
| Val | Met | Ile | Val | Leu | Ser | Gly | Ser | Leu | Leu | His | Arg | Gly | Ala | Pro | |
| | | | | 185 | | | | | 190 | | | | | | 195 |
| Tyr | Arg | Asp | Pro | Leu | Arg | Ile | Pro | Arg | Glu | His | Val | His | Asn | Ala | |
| | | | | 200 | | | | | 205 | | | | | | 210 |
| Ser | Ala | His | Leu | Thr | Phe | Asn | Lys | Phe | Trp | Arg | Arg | Tyr | Gly | Lys | |
| | | | | 215 | | | | | 220 | | | | | | 225 |
| Leu | Ser | Arg | His | Leu | Met | Lys | Val | Lys | Leu | Lys | Lys | Tyr | Thr | Lys | |
| | | | | 230 | | | | | 235 | | | | | | 240 |
| Phe | Leu | Phe | Val | Arg | Asp | Pro | Phe | Val | Arg | Leu | Ile | Ser | Ala | Phe | |
| | | | | 245 | | | | | 250 | | | | | | 255 |
| Arg | Ser | Lys | Phe | Glu | Leu | Glu | Asn | Glu | Glu | Phe | Tyr | Arg | Lys | Phe | |
| | | | | 260 | | | | | 265 | | | | | | 270 |
| Ala | Val | Pro | Met | Leu | Arg | Leu | Tyr | Ala | Asn | His | Thr | Ser | Leu | Pro | |
| | | | | 275 | | | | | 280 | | | | | | 285 |
| Ala | Ser | Ala | Arg | Glu | Ala | Phe | Arg | Ala | Gly | Leu | Lys | Val | Ser | Phe | |
| | | | | 290 | | | | | 295 | | | | | | 300 |
| Ala | Asn | Phe | Ile | Gln | Tyr | Leu | Leu | Asp | Pro | His | Thr | Glu | Lys | Leu | |
| | | | | 305 | | | | | 310 | | | | | | 315 |
| Ala | Pro | Phe | Asn | Glu | His | Trp | Arg | Gln | Val | Tyr | Arg | Leu | Cys | His | |
| | | | | 320 | | | | | 325 | | | | | | 330 |
| Pro | Cys | Gln | Ile | Asp | Tyr | Asp | Phe | Val | Gly | Lys | Leu | Glu | Thr | Leu | |
| | | | | 335 | | | | | 340 | | | | | | 345 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Glu | Asp | Ala | Ala | Gln | Leu | Leu | Gln | Leu | Leu | Gln | Val | Asp | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Gln | Leu | Arg | Phe | Pro | Pro | Ser | Tyr | Arg | Asn | Arg | Thr | Ala | Ser | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Trp | Glu | Glu | Asp | Trp | Phe | Ala | Lys | Ile | Pro | Leu | Ala | Trp | Arg | Gln | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Gln | Leu | Tyr | Lys | Leu | Tyr | Glu | Ala | Asp | Phe | Val | Leu | Phe | Gly | Tyr | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Pro | Lys | Pro | Glu | Asn | Leu | Leu | Arg | Asp | | | | | | | |
| | | | | 410 | | | | | | | | | | | |

<210> 467
 <211> 1071
 <212> DNA
 <213> Homo sapiens

<400> 467
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 gggggcgggc gcggcatcgg agctgggatc gtgcgcgcct tcgtgaacag 200
 cggggcccga gtggttatct gcgacaagga tgagtctggg ggccggggccc 250
 tggagcagga gctccctgga gctgtcttta tcctctgtga tgtgactcag 300
 gaagatgatg tgaagaccct ggtttctgag accatccgcc gatttggccg 350
 cctggattgt gttgtcaaca acgctggcca ccaccaccc ccacagaggc 400
 ctgaggagac ctctgcccag ggattccgcc agctgctgga gctgaaccta 450
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 tcaagggaat gtcataca tctccagcct ggtgggggca atcggccagg 550
 cccaggcagt tccctatgtg gccaccaagg gggcagtaac agccatgacc 600
 aaagctttgg ccctggatga aagtccatat ggtgtccgag tcaactgtat 650
 ctccccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700
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 ggccgcatgg gccagcccgc tgaggctggg gctgcggcag tgttcctggc 800
 ctccgaagcc aacttctgca cgggcattga actgctcgtg acgggggggtg 850
 cagagctggg gtacgggtgc aaggccagtc ggagcacccc cgtggacgcc 900

cccgatatcc cttcctgatt tctctcattt ctacttgggg cccccttcct 950
 aggactctcc caccaccaaac tccaacctgt atcagatgca gcccacaagc 1000
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 ccataaaaac gatttgcagc c 1071

<210> 468
 <211> 270
 <212> PRT
 <213> Homo sapiens

<400> 468

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Gly | Thr | Arg | Tyr | Ala | Gly | Lys | Val | Val | Val | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Gly | Gly | Arg | Gly | Ile | Gly | Ala | Gly | Ile | Val | Arg | Ala | Phe | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asn | Ser | Gly | Ala | Arg | Val | Val | Ile | Cys | Asp | Lys | Asp | Glu | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Arg | Ala | Leu | Glu | Gln | Glu | Leu | Pro | Gly | Ala | Val | Phe | Ile | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Asp | Val | Thr | Gln | Glu | Asp | Asp | Val | Lys | Thr | Leu | Val | Ser | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Ile | Arg | Arg | Phe | Gly | Arg | Leu | Asp | Cys | Val | Val | Asn | Asn | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | His | His | Pro | Pro | Pro | Gln | Arg | Pro | Glu | Glu | Thr | Ser | Ala | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Phe | Arg | Gln | Leu | Leu | Glu | Leu | Asn | Leu | Leu | Gly | Thr | Tyr | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Thr | Lys | Leu | Ala | Leu | Pro | Tyr | Leu | Arg | Lys | Ser | Gln | Gly | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Ile | Asn | Ile | Ser | Ser | Leu | Val | Gly | Ala | Ile | Gly | Gln | Ala | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ala | Val | Pro | Tyr | Val | Ala | Thr | Lys | Gly | Ala | Val | Thr | Ala | Met | Thr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Ala | Leu | Ala | Leu | Asp | Glu | Ser | Pro | Tyr | Gly | Val | Arg | Val | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Cys | Ile | Ser | Pro | Gly | Asn | Ile | Trp | Thr | Pro | Leu | Trp | Glu | Glu | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Ala | Leu | Met | Pro | Asp | Pro | Arg | Ala | Thr | Ile | Arg | Glu | Gly | Met |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Gln | Pro | Leu | Gly | Arg | Met | Gly | Gln | Pro | Ala | Glu | Val | Gly |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ala | Ala | Val | Phe | Leu | Ala | Ser | Glu | Ala | Asn | Phe | Cys | Thr | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Glu | Leu | Leu | Val | Thr | Gly | Gly | Ala | Glu | Leu | Gly | Tyr | Gly | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Ala | Ser | Arg | Ser | Thr | Pro | Val | Asp | Ala | Pro | Asp | Ile | Pro | Ser |
| | | | | 260 | | | | | 265 | | | | | 270 |

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 <211> 687
 <212> DNA
 <213> Homo sapiens

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 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
 ggcccagctg aggaacagct cagagctggc ccagagaaaag tgtgaggtca 300
 acttgacgct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350
 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
 gtgcctgtgt ctgggctgtg tgaaccctt caccatgcag gaggaccgca 450
 gcatggtgag cgtgccggtg ttcagccagg ttctgtgcg ccgccgcctc 500
 tgcccgccac cgccccgcac agggccttgc cgccagcgcg cagtcatgga 550
 gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600
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 ggcctatgaa aagtaaacac tgacttttga aagcaag 687

<210> 470
 <211> 180
 <212> PRT
 <213> Homo sapiens

<400> 470
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 Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys
 20 25 30

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gln | Gly | Arg | Pro | Gly | Pro | Leu | Ala | Pro | Gly | Pro | His | Gln | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Leu | Asp | Leu | Val | Ser | Arg | Met | Lys | Pro | Tyr | Ala | Arg | Met | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Tyr | Glu | Arg | Asn | Ile | Glu | Glu | Met | Val | Ala | Gln | Leu | Arg | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Ser | Glu | Leu | Ala | Gln | Arg | Lys | Cys | Glu | Val | Asn | Leu | Gln | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Trp | Met | Ser | Asn | Lys | Arg | Ser | Leu | Ser | Pro | Trp | Gly | Tyr | Ser | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | His | Asp | Pro | Ser | Arg | Ile | Pro | Val | Asp | Leu | Pro | Glu | Ala | Arg |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Leu | Cys | Leu | Gly | Cys | Val | Asn | Pro | Phe | Thr | Met | Gln | Glu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Arg | Ser | Met | Val | Ser | Val | Pro | Val | Phe | Ser | Gln | Val | Pro | Val | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Arg | Leu | Cys | Pro | Pro | Pro | Pro | Arg | Thr | Gly | Pro | Cys | Arg | Gln |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Ala | Val | Met | Glu | Thr | Ile | Ala | Val | Gly | Cys | Thr | Cys | Ile | Phe |
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<210> 471
 <211> 2368
 <212> DNA
 <213> Homo sapiens

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 ctccccgccg agaagcctcg ctcggcgccc aacatggcgg gtgggcgctg 150
 cggcccgag ctaacggcgc tcctggccgc ctggatcgcg gctgtggcgg 200
 cgacggcagg ccccgaggag gccgcgctgc cgccggagca gagccgggtc 250
 cagcccatga ccgcctcaa ctggacgctg gtgatggagg gcgagtggat 300
 gctgaaattt tacgccccat ggtgtccatc ctgccagcag actgattcag 350
 aatgggaggc ttttgcaaag aatggtgaaa tacttcagat cagtgtgggg 400
 aaggtagatg tcattcaaga accaggtttg agtggccgct tctttgtcac 450
 cactctccca gcattttttc atgcaaagga tgggatattc cgccgttatt 500

gtggcccagg aatcttcgaa gacctgcaga attatatctt agagaagaaa 550
tggcaatcag tcgagcctct gactggctgg aaatccccag cttctctaac 600
gatgtctgga atggctggtc tttttagcat ctctggcaag atatggcatc 650
ttcacaaacta tttcacagtg actcttggaa ttcttgcttg gtgttcttat 700
gtgttttttcg tcatagccac cttgggttttt ggccttttta tgggtctggt 750
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ctgagcgttc tgagcagaat cggagatcag aggaggctca tagagctgaa 850
cagttgcagg atgcggagga ggaaaaagat gattcaaag aagaagaaaa 900
caaagacagc cttgtagatg atgaagaaga gaaagaagat cttggcgatg 950
aggatgaagc agaggaagaa gaggaggagg acaacttggc tgctggtgtg 1000
gatgaggaga gaagtgaggc caatgatcag gggccccag gagaggacgg 1050
tgtgaccgg gaggaagtag agcctgagga ggctgaagaa ggcattctctg 1100
agcaaccctg cccagctgac acagaggtgg tggaagactc cttgaggcag 1150
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gtaccaaatc ctttaattttt cctgaatgag caagcttctc ttaaaagatg 1300
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taaccataac ccctgaagct gtgactgcc aacatctcaa atgaaatgtt 1950

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 aaggtagtct tgtgaagaaa agttgaatac tgttttgttt tcatctcaag 2150
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 gattttcctt cagtgatgtg cttttgggtga aagaattaat gaactccagt 2250
 acctgaaagt gaaagatttg attttgtttc catcttctgt aatcttccaa 2300
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 agggaggcta atttcttt 2368

<210> 472

<211> 349

<212> PRT

<213> Homo sapiens

<400> 472

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Gly | Arg | Cys | Gly | Pro | Gln | Leu | Thr | Ala | Leu | Leu | Ala | 1 | 5 | 10 | 15 |
| Ala | Trp | Ile | Ala | Ala | Val | Ala | Ala | Thr | Ala | Gly | Pro | Glu | Glu | Ala | 20 | 25 | 30 | |
| Ala | Leu | Pro | Pro | Glu | Gln | Ser | Arg | Val | Gln | Pro | Met | Thr | Ala | Ser | 35 | 40 | 45 | |
| Asn | Trp | Thr | Leu | Val | Met | Glu | Gly | Glu | Trp | Met | Leu | Lys | Phe | Tyr | 50 | 55 | 60 | |
| Ala | Pro | Trp | Cys | Pro | Ser | Cys | Gln | Gln | Thr | Asp | Ser | Glu | Trp | Glu | 65 | 70 | 75 | |
| Ala | Phe | Ala | Lys | Asn | Gly | Glu | Ile | Leu | Gln | Ile | Ser | Val | Gly | Lys | 80 | 85 | 90 | |
| Val | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95 | 100 | 105 | |
| Thr | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 | |
| Arg | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 | |
| Leu | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 | |
| Ser | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr | |
| | | | | 170 | | | | | 175 | | | | | | 180 |
| Leu | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala | |
| | | | | 185 | | | | | 190 | | | | | | 195 |
| Thr | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile | |
| | | | | 200 | | | | | 205 | | | | | | 210 |
| Ser | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg | |
| | | | | 215 | | | | | 220 | | | | | | 225 |
| Ser | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln | |
| | | | | 230 | | | | | 235 | | | | | | 240 |
| Leu | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu | |
| | | | | 245 | | | | | 250 | | | | | | 255 |
| Asn | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu | |
| | | | | 260 | | | | | 265 | | | | | | 270 |
| Gly | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu | |
| | | | | 275 | | | | | 280 | | | | | | 285 |
| Ala | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly | |
| | | | | 290 | | | | | 295 | | | | | | 300 |
| Pro | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu | |
| | | | | 305 | | | | | 310 | | | | | | 315 |
| Glu | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr | |
| | | | | 320 | | | | | 325 | | | | | | 330 |
| Glu | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala | |
| | | | | 335 | | | | | 340 | | | | | | 345 |

Asp Lys Gly Leu

<210> 473

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 473

gtccagccca tgaccgcctc caac 24

<210> 474

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 474

ctctcctcat ccacaccagc agcc 24

<210> 475

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 475

gtggatgctg aaattttacg ccccatggtg tccatcctgc cagc 44

<210> 476

<211> 2478

<212> DNA

<213> Homo sapiens

<400> 476

atctggttga actacttaag cttaatttgt taaactccgg taagtaccta 50

gccacatga ttgactcag agattctctt ttgtccacag acagtcattct 100

caggggcaga aagaaaagag ctcccaaattg ctatatctat tcaggggctc 150

tcaagaacaa tggaatatca tcctgattta gaaaatttgg atgaagatgg 200

atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250

tttcagagaa aggatcgtgt gctgcatctc ctccttggcg cctcattgct 300

gtaatttttg gaatcctatg cttggtaata ctggtgatag ctgtggtcct 350

gggtaccatg ggggttcttt ccagcccttg tcctcctaatt tggattatat 400

atgagaagag ctgttatcta ttcagcatgt cactaaattc ctgggatgga 450

agtaaaagac aatgctggca actgggctct aatctcctaa agatagacag 500

ctcaaataaa ttgggattta tagtaaaaca agtgtcttcc caacctgata 550

attcattttg gataggcctt tctcggcccc agactgaggt accatggctc 600

tgggaggatg gatcaacatt ctcttctaac ttatttcaga tcagaaccac 650

agctacccaa gaaaacccat ctccaaattg tgtatggatt cacgtgtcag 700

tcatttatga ccaactgtgt agtgtgccct catatagtat ttgtgagaag 750

aagttttcaa tgtaagagga aggggtggaga aggagagaga aatatgtgag 800

gtagtaagga ggacagaaaa cagaacagaa aagagtaaca gctgagggtca 850

agataaatgc agaaaatgtt tagagagctt ggccaactgt aatcttaacc 900

aagaaattga agggagaggc tgtgatttct gtatttgtcg acctacaggt 950
aggetagtat tatttttcta gttagtagat ccctagacat ggaatcaggg 1000
cagccaagct tgagttttta ttttttattt atttattttt ttgagatagg 1050
gtctcacttt gttacccagg ctggagtgc gtggcacaat ctcgactcac 1100
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tttccatact ttcccactgg tgctattttt atttccaatg gatatttctg 2300

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 agaaattgta ccaattttac taaattatgc agtttaaaat ggatgatttt 2400
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2478

<210> 477
 <211> 201
 <212> PRT
 <213> Homo sapiens

<400> 477
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 20 25 30
 Val Ser Glu Lys Gly Ser Cys Ala Ala Ser Pro Pro Trp Arg Leu
 35 40 45
 Ile Ala Val Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile
 50 55 60
 Ala Val Val Leu Gly Thr Met Gly Val Leu Ser Ser Pro Cys Pro
 65 70 75
 Pro Asn Trp Ile Ile Tyr Glu Lys Ser Cys Tyr Leu Phe Ser Met
 80 85 90
 Ser Leu Asn Ser Trp Asp Gly Ser Lys Arg Gln Cys Trp Gln Leu
 95 100 105
 Gly Ser Asn Leu Leu Lys Ile Asp Ser Ser Asn Glu Leu Gly Phe
 110 115 120
 Ile Val Lys Gln Val Ser Ser Gln Pro Asp Asn Ser Phe Trp Ile
 125 130 135
 Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp Leu Trp Glu Asp
 140 145 150
 Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg Thr Thr Ala
 155 160 165
 Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His Val Ser
 170 175 180
 Val Ile Tyr Asp Gln Leu Cys Ser Val Pro Ser Tyr Ser Ile Cys
 185 190 195
 Glu Lys Lys Phe Ser Met
 200

<210> 478

<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 478
gtccacagac agtcatctca ggagcag 27

<210> 479
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 479
acaagtgtct tcccaacctg 20

<210> 480
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 480
atcctcccag agccatggta cctc 24

<210> 481
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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t 51

<210> 482
<211> 3819
<212> DNA
<213> Homo sapiens

<400> 482
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tcttggtcga tcgtaacctc cacctcccgg gttcaagtga ttctcatgcc 150

tcagcctccc gagtagctgg gattacaggt ggtgacttcc aagagtgact 200
ccgtcggagg aaaatgactc ccagtcgct gctgcagacg aactgttcc 250
tgctgagtct gcttttctg gtccaagggtg cccacggcag gggccacagg 300
gaagactttc gcttctgcag ccagcggaac cagacacaca ggagcagcct 350
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gtcctcccca cacggccgct cacaatgcct cgggtggacat gtgcgagctc 750
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<210> 483

<211> 693

<212> PRT

<213> Homo sapiens

<400> 483

| | | | | | | | | | | | | | | |
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| Met | Thr | Pro | Gln | Ser | Leu | Leu | Gln | Thr | Thr | Leu | Phe | Leu | Leu | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Phe | Leu | Val | Gln | Gly | Ala | His | Gly | Arg | Gly | His | Arg | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Phe | Arg | Phe | Cys | Ser | Gln | Arg | Asn | Gln | Thr | His | Arg | Ser | Ser |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Leu | His | Tyr | Lys | Pro | Thr | Pro | Asp | Leu | Arg | Ile | Ser | Ile | Glu | Asn |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Ser | Glu | Glu | Ala | Leu | Thr | Val | His | Ala | Pro | Phe | Pro | Ala | Ala | His |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Pro | Ala | Ser | Arg | Ser | Phe | Pro | Asp | Pro | Arg | Gly | Leu | Tyr | His | Phe |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Leu | Tyr | Trp | Asn | Arg | His | Ala | Gly | Arg | Leu | His | Leu | Leu | Tyr | 95 | 100 | 105 |
| Gly | Lys | Arg | Asp | Phe | Leu | Leu | Ser | Asp | Lys | Ala | Ser | Ser | Leu | Leu | 110 | 115 | 120 |
| Cys | Phe | Gln | His | Gln | Glu | Glu | Ser | Leu | Ala | Gln | Gly | Pro | Pro | Leu | 125 | 130 | 135 |
| Leu | Ala | Thr | Ser | Val | Thr | Ser | Trp | Trp | Ser | Pro | Gln | Asn | Ile | Ser | 140 | 145 | 150 |
| Leu | Pro | Ser | Ala | Ala | Ser | Phe | Thr | Phe | Ser | Phe | His | Ser | Pro | Pro | 155 | 160 | 165 |
| His | Thr | Ala | Ala | His | Asn | Ala | Ser | Val | Asp | Met | Cys | Glu | Leu | Lys | 170 | 175 | 180 |
| Arg | Asp | Leu | Gln | Leu | Leu | Ser | Gln | Phe | Leu | Lys | His | Pro | Gln | Lys | 185 | 190 | 195 |
| Ala | Ser | Arg | Arg | Pro | Ser | Ala | Ala | Pro | Ala | Ser | Gln | Gln | Leu | Gln | 200 | 205 | 210 |
| Ser | Leu | Glu | Ser | Lys | Leu | Thr | Ser | Val | Arg | Phe | Met | Gly | Asp | Met | 215 | 220 | 225 |
| Val | Ser | Phe | Glu | Glu | Asp | Arg | Ile | Asn | Ala | Thr | Val | Trp | Lys | Leu | 230 | 235 | 240 |
| Gln | Pro | Thr | Ala | Gly | Leu | Gln | Asp | Leu | His | Ile | His | Ser | Arg | Gln | 245 | 250 | 255 |
| Glu | Glu | Glu | Gln | Ser | Glu | Ile | Met | Glu | Tyr | Ser | Val | Leu | Leu | Pro | 260 | 265 | 270 |
| Arg | Thr | Leu | Phe | Gln | Arg | Thr | Lys | Gly | Arg | Ser | Gly | Glu | Ala | Glu | 275 | 280 | 285 |
| Lys | Arg | Leu | Leu | Leu | Val | Asp | Phe | Ser | Ser | Gln | Ala | Leu | Phe | Gln | 290 | 295 | 300 |
| Asp | Lys | Asn | Ser | Ser | Gln | Val | Leu | Gly | Glu | Lys | Val | Leu | Gly | Ile | 305 | 310 | 315 |
| Val | Val | Gln | Asn | Thr | Lys | Val | Ala | Asn | Leu | Thr | Glu | Pro | Val | Val | 320 | 325 | 330 |
| Leu | Thr | Phe | Gln | His | Gln | Leu | Gln | Pro | Lys | Asn | Val | Thr | Leu | Gln | 335 | 340 | 345 |
| Cys | Val | Phe | Trp | Val | Glu | Asp | Pro | Thr | Leu | Ser | Ser | Pro | Gly | His | 350 | 355 | 360 |
| Trp | Ser | Ser | Ala | Gly | Cys | Glu | Thr | Val | Arg | Arg | Glu | Thr | Gln | Thr | 365 | 370 | 375 |

| | | | |
|---|-----|-----|-----|
| Ser Cys Phe Cys Asn His Leu Thr Tyr Phe Ala Val Leu Met Val | 380 | 385 | 390 |
| Ser Ser Val Glu Val Asp Ala Val His Lys His Tyr Leu Ser Leu | 395 | 400 | 405 |
| Leu Ser Tyr Val Gly Cys Val Val Ser Ala Leu Ala Cys Leu Val | 410 | 415 | 420 |
| Thr Ile Ala Ala Tyr Leu Cys Ser Arg Val Pro Leu Pro Cys Arg | 425 | 430 | 435 |
| Arg Lys Pro Arg Asp Tyr Thr Ile Lys Val His Met Asn Leu Leu | 440 | 445 | 450 |
| Leu Ala Val Phe Leu Leu Asp Thr Ser Phe Leu Leu Ser Glu Pro | 455 | 460 | 465 |
| Val Ala Leu Thr Gly Ser Glu Ala Gly Cys Arg Ala Ser Ala Ile | 470 | 475 | 480 |
| Phe Leu His Phe Ser Leu Leu Thr Cys Leu Ser Trp Met Gly Leu | 485 | 490 | 495 |
| Glu Gly Tyr Asn Leu Tyr Arg Leu Val Val Glu Val Phe Gly Thr | 500 | 505 | 510 |
| Tyr Val Pro Gly Tyr Leu Leu Lys Leu Ser Ala Met Gly Trp Gly | 515 | 520 | 525 |
| Phe Pro Ile Phe Leu Val Thr Leu Val Ala Leu Val Asp Val Asp | 530 | 535 | 540 |
| Asn Tyr Gly Pro Ile Ile Leu Ala Val His Arg Thr Pro Glu Gly | 545 | 550 | 555 |
| Val Ile Tyr Pro Ser Met Cys Trp Ile Arg Asp Ser Leu Val Ser | 560 | 565 | 570 |
| Tyr Ile Thr Asn Leu Gly Leu Phe Ser Leu Val Phe Leu Phe Asn | 575 | 580 | 585 |
| Met Ala Met Leu Ala Thr Met Val Val Gln Ile Leu Arg Leu Arg | 590 | 595 | 600 |
| Pro His Thr Gln Lys Trp Ser His Val Leu Thr Leu Leu Gly Leu | 605 | 610 | 615 |
| Ser Leu Val Leu Gly Leu Pro Trp Ala Leu Ile Phe Phe Ser Phe | 620 | 625 | 630 |
| Ala Ser Gly Thr Phe Gln Leu Val Val Leu Tyr Leu Phe Ser Ile | 635 | 640 | 645 |
| Ile Thr Ser Phe Gln Gly Phe Leu Ile Phe Ile Trp Tyr Trp Ser | 650 | 655 | 660 |

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
665 670 675

Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
680 685 690

Ser Arg Ile

<210> 484

<211> 516

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 68, 70, 84, 147

<223> unknown base

<400> 484

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cgggtggcct gacaggctct gaaggctggc tgccagacca gtgccatctt 200
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<210> 485

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 485

ggcattggag cagtgctggg tg 22

<210> 486

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 486

tggaggccta gatgcggctg gacg 24 .

<210> 487

<211> 2849

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2715

<223> unknown base

<400> 487

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gcgattctct gctgccagag caggctcggc gcttccaccc cagtgcagcc 200
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cggagtacaa gatcctcagc atgagagaat tattactgtg tctactaatg 450
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<210> 488

<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | |
|---|-----|-----|-----|
| Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala | 170 | 175 | 180 |
| Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr | 185 | 190 | 195 |
| Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp Gln Leu | 200 | 205 | 210 |
| Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys | 215 | 220 | 225 |
| Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu | 230 | 235 | 240 |
| Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe | 245 | 250 | 255 |
| Ser Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe | 260 | 265 | 270 |
| Trp Pro Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala | 275 | 280 | 285 |
| Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys | 290 | 295 | 300 |
| Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr | 305 | 310 | 315 |
| Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala Leu Glu | 320 | 325 | 330 |
| His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly | 335 | 340 | 345 |

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<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 489

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<210> 490

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 490

gaactaaaga gaaccgatac cattttctgg ccaggttgtc 40

<210> 491

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 491

caccacagcg tttaaccagg 20

<210> 492

<211> 20

<212> DNA

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<223> Synthetic oligonucleotide probe

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acaacaggca cagttccac 20

<210> 493

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 493

ggcggaatcc aacctgagta g 21

<210> 494

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 494

gcggctatcc tcctgtgctc 20

<210> 495

<211> 3283

<212> DNA

<213> Homo sapiens

<400> 495

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gacctctaca ttccattttg gaagaagact aaaaatggtg tttccaatgt 100

ggacactgaa gagacaaatt cttatccttt ttaacataat cctaatttcc 150

aaactccttg gggctagatg gtttcctaaa actctgccct gtgatgtcac 200
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<212> PRT

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<400> 496

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| Met | Val | Phe | Pro | Met | Trp | Thr | Leu | Lys | Arg | Gln | Ile | Leu | Ile | Leu | | 1 | 5 | 10 | 15 |
| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe | | 20 | 25 | 30 | |
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn | | 35 | 40 | 45 | |
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro | | 50 | 55 | 60 | |
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn | | 65 | 70 | 75 | |
| His | Ile | Pro | Asp | Ile | Ser | Pro | Ala | Ser | Phe | His | Arg | Leu | Asp | His | | 80 | 85 | 90 | |
| Leu | Val | Glu | Ile | Asp | Phe | Arg | Cys | Asn | Cys | Val | Pro | Ile | Pro | Leu | | 95 | 100 | 105 | |
| Gly | Ser | Lys | Asn | Asn | Met | Cys | Ile | Lys | Arg | Leu | Gln | Ile | Lys | Pro | | 110 | 115 | 120 | |
| Arg | Ser | Phe | Ser | Gly | Leu | Thr | Tyr | Leu | Lys | Ser | Leu | Tyr | Leu | Asp | | 125 | 130 | 135 | |
| Gly | Asn | Gln | Leu | Leu | Glu | Ile | Pro | Gln | Gly | Leu | Pro | Pro | Ser | Leu | | 140 | 145 | 150 | |
| Gln | Leu | Leu | Ser | Leu | Glu | Ala | Asn | Asn | Ile | Phe | Ser | Ile | Arg | Lys | | 155 | 160 | 165 | |
| Glu | Asn | Leu | Thr | Glu | Leu | Ala | Asn | Ile | Glu | Ile | Leu | Tyr | Leu | Gly | | 170 | 175 | 180 | |
| Gln | Asn | Cys | Tyr | Tyr | Arg | Asn | Pro | Cys | Tyr | Val | Ser | Tyr | Ser | Ile | | 185 | 190 | 195 | |

| | |
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| Leu Lys Asp Asn Asn Val Thr Ala Val | Pro Thr Val Leu Pro Ser |
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| Thr Leu Thr Glu Leu Tyr Leu Tyr Asn | Asn Met Ile Ala Lys Ile |
| 230 | 235 240 |
| Gln Glu Asp Asp Phe Asn Asn Leu Asn | Gln Leu Gln Ile Leu Asp |
| 245 | 250 255 |
| Leu Ser Gly Asn Cys Pro Arg Cys Tyr | Asn Ala Pro Phe Pro Cys |
| 260 | 265 270 |
| Ala Pro Cys Lys Asn Asn Ser Pro Leu | Gln Ile Pro Val Asn Ala |
| 275 | 280 285 |
| Phe Asp Ala Leu Thr Glu Leu Lys Val | Leu Arg Leu His Ser Asn |
| 290 | 295 300 |
| Ser Leu Gln His Val Pro Pro Arg Trp | Phe Lys Asn Ile Asn Lys |
| 305 | 310 315 |
| Leu Gln Glu Leu Asp Leu Ser Gln Asn | Phe Leu Ala Lys Glu Ile |
| 320 | 325 330 |
| Gly Asp Ala Lys Phe Leu His Phe Leu | Pro Ser Leu Ile Gln Leu |
| 335 | 340 345 |
| Asp Leu Ser Phe Asn Phe Glu Leu Gln | Val Tyr Arg Ala Ser Met |
| 350 | 355 360 |
| Asn Leu Ser Gln Ala Phe Ser Ser Leu | Lys Ser Leu Lys Ile Leu |
| 365 | 370 375 |
| Arg Ile Arg Gly Tyr Val Phe Lys Glu | Leu Lys Ser Phe Asn Leu |
| 380 | 385 390 |
| Ser Pro Leu His Asn Leu Gln Asn Leu | Glu Val Leu Asp Leu Gly |
| 395 | 400 405 |
| Thr Asn Phe Ile Lys Ile Ala Asn Leu | Ser Met Phe Lys Gln Phe |
| 410 | 415 420 |
| Lys Arg Leu Lys Val Ile Asp Leu Ser | Val Asn Lys Ile Ser Pro |
| 425 | 430 435 |
| Ser Gly Asp Ser Ser Glu Val Gly Phe | Cys Ser Asn Ala Arg Thr |
| 440 | 445 450 |
| Ser Val Glu Ser Tyr Glu Pro Gln Val | Leu Glu Gln Leu His Tyr |
| 455 | 460 465 |
| Phe Arg Tyr Asp Lys Tyr Ala Arg Ser | Cys Arg Phe Lys Asn Lys |
| 470 | 475 480 |

| | | | | |
|-----------------|---|-----|-----|-----|
| Glu Ala Ser Phe | Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly | 485 | 490 | 495 |
| Gln Thr Leu Asp | Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser | 500 | 505 | 510 |
| Ser Asp Phe Gln | His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser | 515 | 520 | 525 |
| Gly Asn Leu Ile | Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro | 530 | 535 | 540 |
| Leu Ala Glu Leu | Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp | 545 | 550 | 555 |
| Leu Leu His Ser | Thr Ala Phe Glu Glu Leu His Lys Leu Glu Val | 560 | 565 | 570 |
| Leu Asp Ile Ser | Ser Asn Ser His Tyr Phe Gln Ser Glu Gly Ile | 575 | 580 | 585 |
| Thr His Met Leu | Asn Phe Thr Lys Asn Leu Lys Val Leu Gln Lys | 590 | 595 | 600 |
| Leu Met Met Asn | Asp Asn Asp Ile Ser Ser Ser Thr Ser Arg Thr | 605 | 610 | 615 |
| Met Glu Ser Glu | Ser Leu Arg Thr Leu Glu Phe Arg Gly Asn His | 620 | 625 | 630 |
| Leu Asp Val Leu | Trp Arg Glu Gly Asp Asn Arg Tyr Leu Gln Leu | 635 | 640 | 645 |
| Phe Lys Asn Leu | Leu Lys Leu Glu Glu Leu Asp Ile Ser Lys Asn | 650 | 655 | 660 |
| Ser Leu Ser Phe | Leu Pro Ser Gly Val Phe Asp Gly Met Pro Pro | 665 | 670 | 675 |
| Asn Leu Lys Asn | Leu Ser Leu Ala Lys Asn Gly Leu Lys Ser Phe | 680 | 685 | 690 |
| Ser Trp Lys Lys | Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu Asp | 695 | 700 | 705 |
| Leu Ser His Asn | Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn | 710 | 715 | 720 |
| Cys Ser Arg Ser | Leu Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile | 725 | 730 | 735 |
| Arg Ser Leu Thr | Lys Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg | 740 | 745 | 750 |
| Tyr Leu Asp Leu | Ser Ser Asn Lys Ile Gln Met Ile Gln Lys Thr | 755 | 760 | 765 |

| | | | |
|---|------|------|------|
| Ser Phe Pro Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu | 770 | 775 | 780 |
| His His Asn Arg Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val | 785 | 790 | 795 |
| Trp Trp Val Asn His Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr | 800 | 805 | 810 |
| Asp Val Thr Cys Val Gly Pro Gly Ala His Lys Gly Gln Ser Val | 815 | 820 | 825 |
| Ile Ser Leu Asp Leu Tyr Thr Cys Glu Leu Asp Leu Thr Asn Leu | 830 | 835 | 840 |
| Ile Leu Phe Ser Leu Ser Ile Ser Val Ser Leu Phe Leu Met Val | 845 | 850 | 855 |
| Met Met Thr Ala Ser His Leu Tyr Phe Trp Asp Val Trp Tyr Ile | 860 | 865 | 870 |
| Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu Ile | 875 | 880 | 885 |
| Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys | 890 | 895 | 900 |
| Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys | 905 | 910 | 915 |
| Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu | 920 | 925 | 930 |
| Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln | 935 | 940 | 945 |
| Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys | 950 | 955 | 960 |
| Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His | 965 | 970 | 975 |
| Gln Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe | 980 | 985 | 990 |
| Leu Glu Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys | 995 | 1000 | 1005 |
| Arg Leu Cys Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln | 1010 | 1015 | 1020 |
| Ala His Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr | 1025 | 1030 | 1035 |
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<400> 498

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Met | Phe | Leu | Gln | Ser | Ser | Met | Leu | Thr | Cys | Ile | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ile | Ser | Gly | Ser | Cys | Glu | Leu | Cys | Ala | Glu | Glu | Asn | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ser | Tyr | Pro | Cys | Asp | Glu | Lys | Lys | Gln | Asn | Asp | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Glu | Cys | Ser | Asn | Arg | Arg | Leu | Gln | Glu | Val | Pro | Gln | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Lys | Tyr | Val | Thr | Glu | Leu | Asp | Leu | Ser | Asp | Asn | Phe | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | His | Ile | Thr | Asn | Glu | Ser | Phe | Gln | Gly | Leu | Gln | Asn | Leu | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ile | Asn | Leu | Asn | His | Asn | Pro | Asn | Val | Gln | His | Gln | Asn | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Gly | Ile | Gln | Ser | Asn | Gly | Leu | Asn | Ile | Thr | Asp | Gly | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Asn | Leu | Lys | Asn | Leu | Arg | Glu | Leu | Leu | Leu | Glu | Asp | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Pro | Gln | Ile | Pro | Ser | Gly | Leu | Pro | Glu | Ser | Leu | Thr | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Leu | Ile | Gln | Asn | Asn | Ile | Tyr | Asn | Ile | Thr | Lys | Glu | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Arg | Leu | Ile | Asn | Leu | Lys | Asn | Leu | Tyr | Leu | Ala | Trp | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Tyr | Phe | Asn | Lys | Val | Cys | Glu | Lys | Thr | Asn | Ile | Glu | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Glu | Thr | Leu | Thr | Asn | Leu | Glu | Leu | Leu | Ser | Leu | Ser | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Leu | Ser | His | Val | Pro | Pro | Lys | Leu | Pro | Ser | Ser | Leu | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Phe | Leu | Ser | Asn | Thr | Gln | Ile | Lys | Tyr | Ile | Ser | Glu | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | |
|-------------------------------------|-------------------------|-----|-----|-----|
| Asp Phe Lys Gly Leu Ile Asn Leu Thr | Leu Leu Asp Leu Ser Gly | 245 | 250 | 255 |
| Asn Cys Pro Arg Cys Phe Asn Ala Pro | Phe Pro Cys Val Pro Cys | 260 | 265 | 270 |
| Asp Gly Gly Ala Ser Ile Asn Ile Asp | Arg Phe Ala Phe Gln Asn | 275 | 280 | 285 |
| Leu Thr Gln Leu Arg Tyr Leu Asn Leu | Ser Ser Thr Ser Leu Arg | 290 | 295 | 300 |
| Lys Ile Asn Ala Ala Trp Phe Lys Asn | Met Pro His Leu Lys Val | 305 | 310 | 315 |
| Leu Asp Leu Glu Phe Asn Tyr Leu Val | Gly Glu Ile Val Ser Gly | 320 | 325 | 330 |
| Ala Phe Leu Thr Met Leu Pro Arg Leu | Glu Ile Leu Asp Leu Ser | 335 | 340 | 345 |
| Phe Asn Tyr Ile Lys Gly Ser Tyr Pro | Gln His Ile Asn Ile Ser | 350 | 355 | 360 |
| Arg Asn Phe Ser Lys Leu Leu Ser Leu | Arg Ala Leu His Leu Arg | 365 | 370 | 375 |
| Gly Tyr Val Phe Gln Glu Leu Arg Glu | Asp Asp Phe Gln Pro Leu | 380 | 385 | 390 |
| Met Gln Leu Pro Asn Leu Ser Thr Ile | Asn Leu Gly Ile Asn Phe | 395 | 400 | 405 |
| Ile Lys Gln Ile Asp Phe Lys Leu Phe | Gln Asn Phe Ser Asn Leu | 410 | 415 | 420 |
| Glu Ile Ile Tyr Leu Ser Glu Asn Arg | Ile Ser Pro Leu Val Lys | 425 | 430 | 435 |
| Asp Thr Arg Gln Ser Tyr Ala Asn Ser | Ser Ser Phe Gln Arg His | 440 | 445 | 450 |
| Ile Arg Lys Arg Arg Ser Thr Asp Phe | Glu Phe Asp Pro His Ser | 455 | 460 | 465 |
| Asn Phe Tyr His Phe Thr Arg Pro Leu | Ile Lys Pro Gln Cys Ala | 470 | 475 | 480 |
| Ala Tyr Gly Lys Ala Leu Asp Leu Ser | Leu Asn Ser Ile Phe Phe | 485 | 490 | 495 |
| Ile Gly Pro Asn Gln Phe Glu Asn Leu | Pro Asp Ile Ala Cys Leu | 500 | 505 | 510 |
| Asn Leu Ser Ala Asn Ser Asn Ala Gln | Val Leu Ser Gly Thr Glu | 515 | 520 | 525 |

| | | | |
|---|-----|-----|-----|
| Phe Ser Ala Ile Pro His Val Lys Tyr Leu Asp Leu Thr Asn Asn | 530 | 535 | 540 |
| Arg Leu Asp Phe Asp Asn Ala Ser Ala Leu Thr Glu Leu Ser Asp | 545 | 550 | 555 |
| Leu Glu Val Leu Asp Leu Ser Tyr Asn Ser His Tyr Phe Arg Ile | 560 | 565 | 570 |
| Ala Gly Val Thr His His Leu Glu Phe Ile Gln Asn Phe Thr Asn | 575 | 580 | 585 |
| Leu Lys Val Leu Asn Leu Ser His Asn Asn Ile Tyr Thr Leu Thr | 590 | 595 | 600 |
| Asp Lys Tyr Asn Leu Glu Ser Lys Ser Leu Val Glu Leu Val Phe | 605 | 610 | 615 |
| Ser Gly Asn Arg Leu Asp Ile Leu Trp Asn Asp Asp Asp Asn Arg | 620 | 625 | 630 |
| Tyr Ile Ser Ile Phe Lys Gly Leu Lys Asn Leu Thr Arg Leu Asp | 635 | 640 | 645 |
| Leu Ser Leu Asn Arg Leu Lys His Ile Pro Asn Glu Ala Phe Leu | 650 | 655 | 660 |
| Asn Leu Pro Ala Ser Leu Thr Glu Leu His Ile Asn Asp Asn Met | 665 | 670 | 675 |
| Leu Lys Phe Phe Asn Trp Thr Leu Leu Gln Gln Phe Pro Arg Leu | 680 | 685 | 690 |
| Glu Leu Leu Asp Leu Arg Gly Asn Lys Leu Leu Phe Leu Thr Asp | 695 | 700 | 705 |
| Ser Leu Ser Asp Phe Thr Ser Ser Leu Arg Thr Leu Leu Leu Ser | 710 | 715 | 720 |
| His Asn Arg Ile Ser His Leu Pro Ser Gly Phe Leu Ser Glu Val | 725 | 730 | 735 |
| Ser Ser Leu Lys His Leu Asp Leu Ser Ser Asn Leu Leu Lys Thr | 740 | 745 | 750 |
| Ile Asn Lys Ser Ala Leu Glu Thr Lys Thr Thr Thr Lys Leu Ser | 755 | 760 | 765 |
| Met Leu Glu Leu His Gly Asn Pro Phe Glu Cys Thr Cys Asp Ile | 770 | 775 | 780 |
| Gly Asp Phe Arg Arg Trp Met Asp Glu His Leu Asn Val Lys Ile | 785 | 790 | 795 |
| Pro Arg Leu Val Asp Val Ile Cys Ala Ser Pro Gly Asp Gln Arg | 800 | 805 | 810 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Gly | Lys | Ser | Ile | Val | Ser | Leu | Glu | Leu | Thr | Thr | Cys | Val | Ser | Asp | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Val | Thr | Ala | Val | Ile | Leu | Phe | Phe | Phe | Thr | Phe | Phe | Ile | Thr | Thr | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Met | Val | Met | Leu | Ala | Ala | Leu | Ala | His | His | Leu | Phe | Tyr | Trp | Asp | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Val | Trp | Phe | Ile | Tyr | Asn | Val | Cys | Leu | Ala | Lys | Val | Lys | Gly | Tyr | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Arg | Ser | Leu | Ser | Thr | Ser | Gln | Thr | Phe | Tyr | Asp | Ala | Tyr | Ile | Ser | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Tyr | Asp | Thr | Lys | Asp | Ala | Ser | Val | Thr | Asp | Trp | Val | Ile | Asn | Glu | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Leu | Arg | Tyr | His | Leu | Glu | Glu | Ser | Arg | Asp | Lys | Asn | Val | Leu | Leu | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Cys | Leu | Glu | Glu | Arg | Asp | Trp | Asp | Pro | Gly | Leu | Ala | Ile | Ile | Asp | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Asn | Leu | Met | Gln | Ser | Ile | Asn | Gln | Ser | Lys | Lys | Thr | Val | Phe | Val | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Leu | Thr | Lys | Lys | Tyr | Ala | Lys | Ser | Trp | Asn | Phe | Lys | Thr | Ala | Phe | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Tyr | Leu | Ala | Leu | Gln | Arg | Leu | Met | Asp | Glu | Asn | Met | Asp | Val | Ile | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Ile | Phe | Ile | Leu | Leu | Glu | Pro | Val | Leu | Gln | His | Ser | Gln | Tyr | Leu | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Arg | Leu | Arg | Gln | Arg | Ile | Cys | Lys | Ser | Ser | Ile | Leu | Gln | Trp | Pro | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Asp | Asn | Pro | Lys | Ala | Glu | Gly | Leu | Phe | Trp | Gln | Thr | Leu | Arg | Asn | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Val | Val | Leu | Thr | Glu | Asn | Asp | Ser | Arg | Tyr | Asn | Asn | Met | Tyr | Val | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Asp | Ser | Ile | Lys | Gln | Tyr | | | | | | | | | | |
| | | | | 1040 | | | | | | | | | | | |

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<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 499
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<210> 500
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 500
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<210> 501
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 501
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<210> 502
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 502
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<210> 503
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 503
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<210> 504
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 504
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<210> 505
<211> 1738
<212> DNA
<213> Homo sapiens

<400> 505
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gtgcctccag gcggccagtg ggctgaggc cccagcaagg gctagggctc 200
atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250
cagcagcatc agcagcccc aggaccggg aggcacaggt ggccccacc 300
accggagga gcagctctg ccctgtccg ggggatgact gattctctc 350
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gaggggctct caggaggtgc tgctgatgtg gcttctggtg ttggcagtgg 450
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ctgtggagca gcaatatgcc agccgccatg ccggaacgga gggagctgtg 750
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gcccaacttg ttattgcag cttataatgg ttacaaat 1738

<210> 506
<211> 273
<212> PRT
<213> Homo sapiens

<400> 506

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu | 1 | 5 | 10 | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20 | 25 | 30 | |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35 | 40 | 45 | |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50 | 55 | 60 | |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65 | 70 | 75 | |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80 | 85 | 90 | |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95 | 100 | 105 | |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 | |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 | |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | 140 | 145 | 150 | |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | | | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 155 | | 160 | | 165 |
| Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly | | | | | |
| | 170 | | 175 | | 180 |
| Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala | | | | | |
| | 185 | | 190 | | 195 |
| Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu | | | | | |
| | 200 | | 205 | | 210 |
| Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala | | | | | |
| | 215 | | 220 | | 225 |
| Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu | | | | | |
| | 230 | | 235 | | 240 |
| Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu | | | | | |
| | 245 | | 250 | | 255 |
| Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys | | | | | |
| | 260 | | 265 | | 270 |

Lys Asp Ser

<210> 507
 <211> 1700
 <212> DNA
 <213> Homo sapiens

<400> 507
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 tggcagcaaa gttcagcttg gctgggcccg ctgtgagggg cttcgcgcta 200
 cgccctgcgg tgtcccagagg gctgaggtct cctcatcttc tccctagcag 250
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 gaggaacccc aaagccacat ctgtagccag gatgagcagt gtgaatccag 350
 gcagcccccga ggaccgggga ggcacagggtg gccccacca cccggaggag 400
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<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | | | 5 | | | | 10 | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | | | 20 | | | | 25 | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | | | 35 | | | | 40 | | | | 45 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

Lys Asp Ser

<210> 509

<211> 1538

<212> DNA

<213> Homo sapiens

<400> 509

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gcgccacca tggccacgcc tgggtccag cagcatcagc agccccagg 200
accggggagg cacaggtggc cccaccacc cggaggagca gtcctgccc 250
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gccacccgc ctggaggcac aggccatgag gggctctcag gaggtgctgc 350
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ctgctgcctg acccccagca caataaaaat gaaacgtg 1538

<210> 510

<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Val | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |

Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu
245 250 255

Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys
260 265 270

Lys Asp Ser

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<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 511

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<210> 512

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 512

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<210> 513

<211> 46

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<213> Artificial Sequence

<220>

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<400> 513

ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46

<210> 514

<211> 2690

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2039-2065

<223> unknown base

<400> 514

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agttgggtct ccgtgtttca ggccggctcc cccttcctgg tctcccttct 200
cccgtgggc cggtttatcg ggaggagatt gtcttcagg gctagcaatt 250
ggacttttga tgatgtttga cccagcggca ggaatagcag gcaacgtgat 300
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<210> 515

<211> 364

<212> PRT

<213> Homo sapiens

<400> 515

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Val | Met | Val | Val | Arg | Lys | Lys | Val | Thr | Arg | Lys | Trp | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Met | Ala | Arg | Gln | Lys | Gly | Ile | Phe | Tyr | Leu | Thr | Leu | Phe | Leu | Ile | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Leu | Gly | Thr | Cys | Thr | Leu | Phe | Phe | Ala | Phe | Glu | Cys | Arg | Tyr | Leu | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Ala | Val | Gln | Leu | Ser | Pro | Ala | Ile | Pro | Val | Phe | Ala | Ala | Met | Leu | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Phe | Leu | Phe | Ser | Met | Ala | Thr | Leu | Leu | Arg | Thr | Ser | Phe | Ser | Asp | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Pro | Gly | Val | Ile | Pro | Arg | Ala | Leu | Pro | Asp | Glu | Ala | Ala | Phe | Ile | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Glu | Met | Glu | Ile | Glu | Ala | Thr | Asn | Gly | Ala | Val | Pro | Gln | Gly | Gln | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Arg | Pro | Pro | Pro | Arg | Ile | Lys | Asn | Phe | Gln | Ile | Asn | Asn | Gln | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Lys | Leu | Lys | Tyr | Cys | Tyr | Thr | Cys | Lys | Ile | Phe | Arg | Pro | Pro | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Arg | Ala | Ser | His | Cys | Ser | Ile | Cys | Asp | Asn | Cys | Val | Glu | Arg | Phe | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Asp | His | His | Cys | Pro | Trp | Val | Gly | Asn | Cys | Val | Gly | Lys | Arg | Asn | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Tyr | Arg | Tyr | Phe | Tyr | Leu | Phe | Ile | Leu | Ser | Leu | Ser | Leu | Leu | Thr | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ile | Tyr | Val | Phe | Ala | Phe | Asn | Ile | Val | Tyr | Val | Ala | Leu | Lys | Ser | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Leu | Lys | Ile | Gly | Phe | Leu | Glu | Thr | Leu | Lys | Glu | Thr | Pro | Gly | Thr | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Val | Leu | Glu | Val | Leu | Ile | Cys | Phe | Phe | Thr | Leu | Trp | Ser | Val | Val | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gly | Leu | Thr | Gly | Phe | His | Thr | Phe | Leu | Val | Ala | Leu | Asn | Gln | Thr | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Thr | Asn | Glu | Asp | Ile | Lys | Gly | Ser | Trp | Thr | Gly | Lys | Asn | Arg | Val | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gln | Asn | Pro | Tyr | Ser | His | Gly | Asn | Ile | Val | Lys | Asn | Cys | Cys | Glu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Val | Leu | Cys | Gly | Pro | Leu | Pro | Pro | Ser | Val | Leu | Asp | Arg | Arg | Gly | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ile | Leu | Pro | Leu | Glu | Glu | Ser | Gly | Ser | Arg | Pro | Pro | Ser | Thr | Gln | | | | | |

| | | | | | |
|-----------------|---|--|-----|--|-----|
| | 305 | | 310 | | 315 |
| Glu Thr Ser Ser | Ser Leu Leu Pro Gln Ser Pro Ala Pro Thr Glu | | | | |
| | 320 | | 325 | | 330 |
| His Leu Asn Ser | Asn Glu Met Pro Glu Asp Ser Ser Thr Pro Glu | | | | |
| | 335 | | 340 | | 345 |
| Glu Met Pro Pro | Pro Glu Pro Pro Glu Pro Pro Gln Glu Ala Ala | | | | |
| | 350 | | 355 | | 360 |

Glu Ala Glu Lys

<210> 516

<211> 255

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 36, 38, 88, 118, 135, 193, 213, 222

<223> unknown base

<400> 516

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cccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200

tcttcacccct ttntctctcc cncctcaciaa tctatgtctt cgccttcaac 250

atcgt 255

<210> 517

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 518

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 518

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<210> 519

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 519

agtggaagtc gacctccc 18

<210> 520

<211> 24

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<210> 521

<211> 50

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 522

<211> 1679

<212> DNA

<213> Homo sapiens

<400> 522

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caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccatccagcc 150

aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc 200

tgtgtctctt ccaaggagtgc cccgtgcgca gcggagatgc caccttcccc 250

aaagctatgg acaacgtgac ggtccggcag ggggagagcg ccaccctcag 300

gtgcactatt gacaaccggg tcaccgggtt ggcctggcta aaccgcagca 350

ccatcctcta tgctgggaat gacaagtggc gcctggatcc tcgcgtggtc 400

cttctgagca acacccaaac gcagtacagc atcgagatcc agaacgtgga 450
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<210> 523

<211> 344

<212> PRT

<213> Homo sapiens

<400> 523

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Lys | Thr | Ile | Gln | Pro | Lys | Met | His | Asn | Ser | Ile | Ser | Trp | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ile | Phe | Thr | Gly | Leu | Ala | Ala | Leu | Cys | Leu | Phe | Gln | Gly | Val | Pro | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Arg | Ser | Gly | Asp | Ala | Thr | Phe | Pro | Lys | Ala | Met | Asp | Asn | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Val | Arg | Gln | Gly | Glu | Ser | Ala | Thr | Leu | Arg | Cys | Thr | Ile | Asp | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asn | Arg | Val | Thr | Arg | Val | Ala | Trp | Leu | Asn | Arg | Ser | Thr | Ile | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Tyr | Ala | Gly | Asn | Asp | Lys | Trp | Cys | Leu | Asp | Pro | Arg | Val | Val | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Ser | Asn | Thr | Gln | Thr | Gln | Tyr | Ser | Ile | Glu | Ile | Gln | Asn | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Val | Tyr | Asp | Glu | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | His | Pro | Lys | Thr | Ser | Arg | Val | His | Leu | Ile | Val | Gln | Val | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Lys | Ile | Val | Glu | Ile | Ser | Ser | Asp | Ile | Ser | Ile | Asn | Glu | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asn | Asn | Ile | Ser | Leu | Thr | Cys | Ile | Ala | Thr | Gly | Arg | Pro | Glu | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Val | Thr | Trp | Arg | His | Ile | Ser | Pro | Lys | Ala | Val | Gly | Phe | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Glu | Asp | Glu | Tyr | Leu | Glu | Ile | Gln | Gly | Ile | Thr | Arg | Glu | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Gly | Asp | Tyr | Glu | Cys | Ser | Ala | Ser | Asn | Asp | Val | Ala | Ala | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Val | Arg | Arg | Val | Lys | Val | Thr | Val | Asn | Tyr | Pro | Pro | Tyr | Ile | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Glu | Ala | Lys | Gly | Thr | Gly | Val | Pro | Val | Gly | Gln | Lys | Gly | Thr | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Gln | Cys | Glu | Ala | Ser | Ala | Val | Pro | Ser | Ala | Glu | Phe | Gln | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Lys | Asp | Asp | Lys | Arg | Leu | Ile | Glu | Gly | Lys | Lys | Gly | Val | Lys | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Val | Glu | Asn | Arg | Pro | Phe | Leu | Ser | Lys | Leu | Ile | Phe | Phe | Asn | Val | |
| | | | | 275 | | | | | 280 | | | | | 285 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | His | Asp | Tyr | Gly | Asn | Tyr | Thr | Cys | Val | Ala | Ser | Asn | Lys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| | | | | | | | | | | | | | | |
| Leu | Gly | His | Thr | Asn | Ala | Ser | Ile | Met | Leu | Phe | Gly | Pro | Gly | Ala |
| | | | | 305 | | | | | 310 | | | | | 315 |
| | | | | | | | | | | | | | | |
| Val | Ser | Glu | Val | Ser | Asn | Gly | Thr | Ser | Arg | Arg | Ala | Gly | Cys | Val |
| | | | | 320 | | | | | 325 | | | | | 330 |
| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |
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| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
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| | | | | | | | | | | | | | | |
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| Glu | Leu | Val | Leu | Ala | Gly | Ala | Ser | Leu | Leu | Leu | Ala | Ala | Leu | Leu |
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Cys | Leu | Val | Ala | Leu | Gly | Val | Gln | Tyr | His | Arg | Asp | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Ser | His | Ser | Thr | Cys | Leu | Thr | Glu | Ala | Cys | Ile | Arg | Val | Ala | Gly | | 65 | 70 | 75 |
| Lys | Ile | Leu | Glu | Ser | Leu | Asp | Arg | Gly | Val | Ser | Pro | Cys | Glu | Asp | | 80 | 85 | 90 |
| Phe | Tyr | Gln | Phe | Ser | Cys | Gly | Gly | Trp | Ile | Arg | Arg | Asn | Pro | Leu | | 95 | 100 | 105 |
| Pro | Asp | Gly | Arg | Ser | Arg | Trp | Asn | Thr | Phe | Asn | Ser | Leu | Trp | Asp | | 110 | 115 | 120 |
| Gln | Asn | Gln | Ala | Ile | Leu | Lys | His | Leu | Leu | Glu | Asn | Thr | Thr | Phe | | 125 | 130 | 135 |
| Asn | Ser | Ser | Ser | Glu | Ala | Glu | Gln | Lys | Thr | Gln | Arg | Phe | Tyr | Leu | | 140 | 145 | 150 |
| Ser | Cys | Leu | Gln | Val | Glu | Arg | Ile | Glu | Glu | Leu | Gly | Ala | Gln | Pro | | 155 | 160 | 165 |
| Leu | Arg | Asp | Leu | Ile | Glu | Lys | Ile | Gly | Gly | Trp | Asn | Ile | Thr | Gly | | 170 | 175 | 180 |
| Pro | Trp | Asp | Gln | Asp | Asn | Phe | Met | Glu | Val | Leu | Lys | Ala | Val | Ala | | 185 | 190 | 195 |
| Gly | Thr | Tyr | Arg | Ala | Thr | Pro | Phe | Phe | Thr | Val | Tyr | Ile | Ser | Ala | | 200 | 205 | 210 |
| Asp | Ser | Lys | Ser | Ser | Asn | Ser | Asn | Val | Ile | Gln | Val | Asp | Gln | Ser | | 215 | 220 | 225 |
| Gly | Leu | Phe | Leu | Pro | Ser | Arg | Asp | Tyr | Tyr | Leu | Asn | Arg | Thr | Ala | | 230 | 235 | 240 |
| Asn | Glu | Lys | Val | Leu | Thr | Ala | Tyr | Leu | Asp | Tyr | Met | Glu | Glu | Leu | | 245 | 250 | 255 |
| Gly | Met | Leu | Leu | Gly | Gly | Arg | Pro | Thr | Ser | Thr | Arg | Glu | Gln | Met | | 260 | 265 | 270 |
| Gln | Gln | Val | Leu | Glu | Leu | Glu | Ile | Gln | Leu | Ala | Asn | Ile | Thr | Val | | 275 | 280 | 285 |
| Pro | Gln | Asp | Gln | Arg | Arg | Asp | Glu | Glu | Lys | Ile | Tyr | His | Lys | Met | | 290 | 295 | 300 |
| Ser | Ile | Ser | Glu | Leu | Gln | Ala | Leu | Ala | Pro | Ser | Met | Asp | Trp | Leu | | 305 | 310 | 315 |
| Glu | Phe | Leu | Ser | Phe | Leu | Leu | Ser | Pro | Leu | Glu | Leu | Ser | Asp | Ser | | 320 | 325 | 330 |
| Glu | Pro | Val | Val | Val | Tyr | Gly | Met | Asp | Tyr | Leu | Gln | Gln | Val | Ser | | 335 | 340 | 345 |

| | |
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| Phe Glu Ser Ala Gln Glu Lys Leu Leu | Glu Thr Leu Tyr Gly Thr |
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| Lys Lys Ser Cys Val Pro Arg Trp Gln | Thr Cys Ile Ser Asn Thr |
| 395 | 400 405 |
| Asp Asp Ala Leu Gly Phe Ala Leu Gly | Ser Leu Phe Val Lys Ala |
| 410 | 415 420 |
| Thr Phe Asp Arg Gln Ser Lys Glu Ile | Ala Glu Gly Met Ile Ser |
| 425 | 430 435 |
| Glu Ile Arg Thr Ala Phe Glu Glu Ala | Leu Gly Gln Leu Val Trp |
| 440 | 445 450 |
| Met Asp Glu Lys Thr Arg Gln Ala Ala | Lys Glu Lys Ala Asp Ala |
| 455 | 460 465 |
| Ile Tyr Asp Met Ile Gly Phe Pro Asp | Phe Ile Leu Glu Pro Lys |
| 470 | 475 480 |
| Glu Leu Asp Asp Val Tyr Asp Gly Tyr | Glu Ile Ser Glu Asp Ser |
| 485 | 490 495 |
| Phe Phe Gln Asn Met Leu Asn Leu Tyr | Asn Phe Ser Ala Lys Val |
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| 515 | 520 525 |
| Met Thr Pro Gln Thr Val Asn Ala Tyr | Tyr Leu Pro Thr Lys Asn |
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| Glu Ile Val Phe Pro Ala Gly Ile Leu | Gln Ala Pro Phe Tyr Ala |
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| Arg Asn His Pro Lys Ala Leu Asn Phe | Gly Gly Ile Gly Val Val |
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| Met Gly His Glu Leu Thr His Ala Phe | Asp Asp Gln Gly Arg Glu |
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| Tyr Asp Lys Glu Gly Asn Leu Arg Pro | Trp Trp Gln Asn Glu Ser |
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| Leu Ala Ala Phe Arg Asn His Thr Ala | Cys Met Glu Glu Gln Tyr |
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| Asn Gln Tyr Gln Val Asn Gly Glu Arg | Leu Asn Gly Arg Gln Thr |
| 620 | 625 630 |

| | | | | | | | | | | | | | | | |
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| Asn | Ala | Tyr | Lys | Ala | Trp | Leu | Arg | Lys | His | Gly | Glu | Glu | Gln | Gln | |
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| Leu | Pro | Ala | Val | Gly | Leu | Thr | Asn | His | Gln | Leu | Phe | Phe | Val | Gly | |
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| Phe | Ala | Gln | Val | Trp | Cys | Ser | Val | Arg | Thr | Pro | Glu | Ser | Ser | His | |
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| Glu | Gly | Leu | Val | Thr | Asp | Pro | His | Ser | Pro | Ala | Arg | Phe | Arg | Val | |
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| Leu | Gly | Thr | Leu | Ser | Asn | Ser | Arg | Asp | Phe | Leu | Arg | His | Phe | Gly | |
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| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val | |
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| Ala | Ala | Val | Leu | Leu | Ser | Leu | Cys | Cys | Leu | Leu | Pro | Ser | Cys | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Ala | Gly | Gln | Ser | Val | Asp | Phe | Pro | Trp | Ala | Ala | Val | Asp | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Met | Met | Val | Arg | Lys | Gly | Asp | Thr | Ala | Val | Leu | Arg | Cys | Tyr | Leu |
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| Glu | Asp | Gly | Ala | Ser | Lys | Gly | Ala | Trp | Leu | Asn | Arg | Ser | Ser | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ile | Phe | Ala | Gly | Gly | Asp | Lys | Trp | Ser | Val | Asp | Pro | Arg | Val | Ser |
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| Ile | Ser | Thr | Leu | Asn | Lys | Arg | Asp | Tyr | Ser | Leu | Gln | Ile | Gln | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Asp | Val | Thr | Asp | Asp | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr |

| | | |
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| Gln His Thr Pro Arg Thr Met Gln Val | His Leu Thr Val Gln Val | |
| 125 | 130 | 135 |
| Pro Pro Lys Ile Tyr Asp Ile Ser Asn | Asp Met Thr Val Asn Glu | |
| 140 | 145 | 150 |
| Gly Thr Asn Val Thr Leu Thr Cys Leu | Ala Thr Gly Lys Pro Glu | |
| 155 | 160 | 165 |
| Pro Ser Ile Ser Trp Arg His Ile Ser | Pro Ser Ala Lys Pro Phe | |
| 170 | 175 | 180 |
| Glu Asn Gly Gln Tyr Leu Asp Ile Tyr | Gly Ile Thr Arg Asp Gln | |
| 185 | 190 | 195 |
| Ala Gly Glu Tyr Glu Cys Ser Ala Glu | Asn Ala Val Ser Phe Pro | |
| 200 | 205 | 210 |
| Asp Val Arg Lys Val Lys Val Val Val | Asn Phe Ala Pro Thr Ile | |
| 215 | 220 | 225 |
| Gln Glu Ile Lys Ser Gly Thr Val Thr | Pro Gly Arg Ser Gly Leu | |
| 230 | 235 | 240 |
| Ile Arg Cys Glu Gly Ala Gly Val Pro | Pro Pro Ala Phe Glu Trp | |
| 245 | 250 | 255 |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn | Gly Gln Gln Gly Ile Ile | |
| 260 | 265 | 270 |
| Ile Gln Asn Phe Ser Thr Arg Ser Ile | Leu Thr Val Thr Asn Val | |
| 275 | 280 | 285 |
| Thr Gln Glu His Phe Gly Asn Tyr Thr | Cys Val Ala Ala Asn Lys | |
| 290 | 295 | 300 |
| Leu Gly Thr Thr Asn Ala Ser Leu Pro | Leu Asn Pro Pro Ser Thr | |
| 305 | 310 | 315 |
| Ala Gln Tyr Gly Ile Thr Gly Ser Ala | Asp Val Leu Phe Ser Cys | |
| 320 | 325 | 330 |
| Trp Tyr Leu Val Leu Thr Leu Ser Ser | Phe Thr Ser Ile Phe Tyr | |
| 335 | 340 | 345 |
| Leu Lys Asn Ala Ile Leu Gln | | |
| 350 | | |

<210> 613

<211> 1797

<212> DNA

<213> Homo Sapien

<400> 613

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aaataagaaa attctcaagg aggacgagct cttgagttag acccaacaag 150
ctgcttttca ccaaattgca atggagcctt tcgaaatcaa tgttccaaag 200
cccaagagga gaaatggggt gaacttctcc ctagctgtgg tggatcctta 250
cctgatcctg ctcaccgctg gcgctgggct gctgggtggc caagttctga 300
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ctggcggctg aggacagccc gtccttctcc ttgctgcagt cagcacaccc 400
tggagaacac ctggctcagg gtgcatcgag gctgcaagtc ctgcaggccc 450
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gatggagcaa caggcccctc gggaccccaa ggcccaccgg gagtcaaggg 700
agaggcgggc ctccaaggac cccaggggtg tccagggaag caaggagcca 750
ctggcacccc aggaccccaa ggagagaagg gcagcaaagg cgatgggggt 800
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 gggccctgta caaagtggga gctggcactg ggcagatctg gctggataat 1550
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 ctggggccat catgactgca gccacgagga ggacgcaggc gtggagtgca 1650
 gcgtctgacc cggaaccctt ttcatttctc tgctcccgag gtgtcctcgg 1700
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<210> 614

<211> 520

<212> PRT

<213> Homo Sapien

<400> 614

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Asn | Lys | Lys | Ile | Leu | Lys | Glu | Asp | Glu | Leu | Leu | Ser | Glu | 1 | 5 | 10 | 15 |
| Thr | Gln | Gln | Ala | Ala | Phe | His | Gln | Ile | Ala | Met | Glu | Pro | Phe | Glu | 20 | 25 | 30 | |
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | 35 | 40 | 45 | |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | 50 | 55 | 60 | |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | 65 | 70 | 75 | |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | 80 | 85 | 90 | |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | 95 | 100 | 105 | |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | 110 | 115 | 120 | |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | 125 | 130 | 135 | |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | 140 | 145 | 150 | |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | 155 | 160 | 165 | |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | 170 | 175 | 180 | |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln | | | | |

| 185 | 190 | 195 |
|--|-----|-----|
| Gly Pro Pro Gly Val Lys Gly Glu Ala Gly Leu Gln Gly Pro Gln 200 | 205 | 210 |
| Gly Ala Pro Gly Lys Gln Gly Ala Thr Gly Thr Pro Gly Pro Gln 215 | 220 | 225 |
| Gly Glu Lys Gly Ser Lys Gly Asp Gly Gly Leu Ile Gly Pro Lys 230 | 235 | 240 |
| Gly Glu Thr Gly Thr Lys Gly Glu Lys Gly Asp Leu Gly Leu Pro 245 | 250 | 255 |
| Gly Ser Lys Gly Asp Arg Gly Met Lys Gly Asp Ala Gly Val Met 260 | 265 | 270 |
| Gly Pro Pro Gly Ala Gln Gly Ser Lys Gly Asp Phe Gly Arg Pro 275 | 280 | 285 |
| Gly Pro Pro Gly Leu Ala Gly Phe Pro Gly Ala Lys Gly Asp Gln 290 | 295 | 300 |
| Gly Gln Pro Gly Leu Gln Gly Val Pro Gly Pro Pro Gly Ala Val 305 | 310 | 315 |
| Gly His Pro Gly Ala Lys Gly Glu Pro Gly Ser Ala Gly Ser Pro 320 | 325 | 330 |
| Gly Arg Ala Gly Leu Pro Gly Ser Pro Gly Ser Pro Gly Ala Thr 335 | 340 | 345 |
| Gly Leu Lys Gly Ser Lys Gly Asp Thr Gly Leu Gln Gly Gln Gln 350 | 355 | 360 |
| Gly Arg Lys Gly Glu Ser Gly Val Pro Gly Pro Ala Gly Val Lys 365 | 370 | 375 |
| Gly Glu Gln Gly Ser Pro Gly Leu Ala Gly Pro Lys Gly Ala Pro 380 | 385 | 390 |
| Gly Gln Ala Gly Gln Lys Gly Asp Gln Gly Val Lys Gly Ser Ser 395 | 400 | 405 |
| Gly Glu Gln Gly Val Lys Gly Glu Lys Gly Glu Arg Gly Glu Asn 410 | 415 | 420 |
| Ser Val Ser Val Arg Ile Val Gly Ser Ser Asn Arg Gly Arg Ala 425 | 430 | 435 |
| Glu Val Tyr Tyr Ser Gly Thr Trp Gly Thr Ile Cys Asp Asp Glu 440 | 445 | 450 |
| Trp Gln Asn Ser Asp Ala Ile Val Phe Cys Arg Met Leu Gly Tyr 455 | 460 | 465 |
| Ser Lys Gly Arg Ala Leu Tyr Lys Val Gly Ala Gly Thr Gly Gln | | |

| | | |
|---|-----|-----|
| 470 | 475 | 480 |
| Ile Trp Leu Asp Asn Val Gln Cys Arg Gly Thr Glu Ser Thr Leu | | |
| 485 | 490 | 495 |
| Trp Ser Cys Thr Lys Asn Ser Trp Gly His His Asp Cys Ser His | | |
| 500 | 505 | 510 |
| Glu Glu Asp Ala Gly Val Glu Cys Ser Val | | |
| 515 | 520 | |

<210> 615
 <211> 647
 <212> DNA
 <213> Homo Sapien

<400> 615
 cccacgcgtc cgaaggcaga caaaggttca tttgtaaaga agtccttcc 50
 agcacctcct ctcttctcct tttgccaaa ctcaccagt gagtgtgagc 100
 atttaagaag catcctctgc caagacaaa aggaaagaag aaaaagggcc 150
 aaaagccaaa atgaaactga tgggtacttgt tttcaccatt gggctaactt 200
 tgctgctagg agttcaagcc atgcctgcaa atgcctctc ttgctacaga 250
 aagatactaa aagatcacia ctgtcacaac cttccggaag gagtagctga 300
 cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350
 gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgcca 400
 aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttccac 500
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550
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 gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaaa 647

<210> 616
 <211> 98
 <212> PRT
 <213> Homo Sapien

<400> 616
 Met Lys Leu Met Val Leu Val Phe Thr Ile Gly Leu Thr Leu Leu
 1 5 10 15
 Leu Gly Val Gln Ala Met Pro Ala Asn Arg Leu Ser Cys Tyr Arg
 20 25 30
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
 35 40 45

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Leu | Thr | Gln | Ile | Asp | Val | Asn | Val | Gln | Asp | His | Phe | Trp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Gly | Lys | Gly | Cys | Glu | Met | Ile | Cys | Tyr | Cys | Asn | Phe | Ser | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Leu | Cys | Cys | Pro | Lys | Asp | Val | Phe | Phe | Gly | Pro | Lys | Ile | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Val | Ile | Pro | Cys | Asn | Asn | Gln | | | | | | | |
| | | | | 95 | | | | | | | | | | |

<210> 617
 <211> 2558
 <212> DNA
 <213> Homo Sapien

<400> 617
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 cagcctgcag ggctgataag cgaggcatta gtgagattga gagagacttt 100
 accccgccgt ggtggttgga gggcgcgcag tagagcagca gcacaggcgc 150
 ggtccccggg aggccggctc tgctcgcgcc gagatgtgga atctccttca 200
 cgaaaccgac tcggctgtgg ccaccgcgcg ccgcccgcgc tggctgtgcg 250
 ctgggggcgt ggtgctggcg ggtggcttct ttctcctcgg ctctccttctc 300
 ggggtggttta taaaatcctc caatgaagct actaacatta ctccaaagca 350
 taatatgaaa gcatttttgg atgaattgaa agctgagaac atcaagaagt 400
 tcttacataa ttttacacag ataccacatt tagcaggaac agaacaaaac 450
 tttcagcttg caaagcaa at tcaatcccag tggaaagaat ttggcctgga 500
 ttctgttgag ctagctcatt atgatgtcct gttgtcctac ccaaataaga 550
 ctcatcccaa ctacatctca ataattaatg aagatggaaa tgagattttc 600
 aacacatcat tatttgaacc acctcctcca ggatatgaaa atgtttcgga 650
 tattgtacca cttttcagtg ctttctctcc tcaaggaatg ccagagggcg 700
 atctagtgtg tgtaactat gcacgaactg aagacttctt taaattggaa 750
 cgggacatga aatcaattg ctctgggaaa attgtaattg ccagatatgg 800
 gaaagttttc agaggaaata aggttaaaaa tgcccagctg gcaggggcca 850
 aaggagtcac tctctactcc gaccctgctg actactttgc tcctgggggtg 900
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agaaaaaatg ggtggctcag caccaccaga tagcagctgg agaggaagtc 1150
tcaaagtgcc ctacaatggt ggacctggct ttactggaaa cttttctaca 1200
caaaaagtca agatgcacat ccactctacc aatgaagtga cgagaattta 1250
caatgtgata ggtactctca gaggagcagt ggaaccagac agatatgtca 1300
ttctgggagg tcaccgggac tcatgggtgt ttggtggtat tgaccctcag 1350
agtggagcag ctgttggttca tgaaattgtg aggagctttg gaacactgaa 1400
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cagaagaatt tggctcttctt ggttctactg agtgggcaga ggagaattca 1500
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aattgggaaa caaacaatt cagcggctat ccactgtatc acagtgtcta 1850
tgaaacatat gagttggtgg aaaagtttta tgatccaatg tttaaataatc 1900
acctcactgt ggcccagggt cgaggaggga tgggtgtttga gctagccaat 1950
tccatagtgc tcccttttga ttgtcgagat tatgctgtag ttttaagaaa 2000
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acagaaattg cttccaagtt cagtgagaga ctccaggact ttgacaaaag 2150
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gagcatttat tgatccatta gggttaccag acaggccttt ttataggcat 2250
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aggcctgggg agaagtgaag agacagattt atgttgcagc cttcacagt 2400

caggcagctg cagagacttt gaggtaagta gcctaagagg attttttaga 2450
 gaatccgtat tgaatttggtg tggtatgtca ctcagaaaga atcgtaatgg 2500
 gtatattgat aaattttaaa attggtatat ttgaaataaa gttgaatatt 2550
 atatataa 2558

<210> 618
 <211> 750
 <212> PRT
 <213> Homo Sapien

<400> 618
 Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala
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 Arg Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly
 20 25 30
 Gly Phe Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser
 35 40 45
 Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala
 50 55 60
 Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His
 65 70 75
 Asn Phe Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln Asn Phe
 80 85 90
 Gln Leu Ala Lys Gln Ile Gln Ser Gln Trp Lys Glu Phe Gly Leu
 95 100 105
 Asp Ser Val Glu Leu Ala His Tyr Asp Val Leu Leu Ser Tyr Pro
 110 115 120
 Asn Lys Thr His Pro Asn Tyr Ile Ser Ile Ile Asn Glu Asp Gly
 125 130 135
 Asn Glu Ile Phe Asn Thr Ser Leu Phe Glu Pro Pro Pro Pro Gly
 140 145 150
 Tyr Glu Asn Val Ser Asp Ile Val Pro Pro Phe Ser Ala Phe Ser
 155 160 165
 Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala
 170 175 180
 Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met Lys Ile Asn
 185 190 195
 Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val Phe Arg
 200 205 210

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gly Asn Lys Val | Lys Asn Ala Gln Leu | Ala Gly Ala Lys Gly Val | 215 | 220 | 225 |
| Ile Leu Tyr Ser | Asp Pro Ala Asp Tyr | Phe Ala Pro Gly Val Lys | 230 | 235 | 240 |
| Ser Tyr Pro Asp | Gly Trp Asn Leu Pro | Gly Gly Gly Val Gln Arg | 245 | 250 | 255 |
| Gly Asn Ile Leu | Asn Leu Asn Gly Ala | Gly Asp Pro Leu Thr Pro | 260 | 265 | 270 |
| Gly Tyr Pro Ala | Asn Glu Tyr Ala Tyr | Arg Arg Gly Ile Ala Glu | 275 | 280 | 285 |
| Ala Val Gly Leu | Pro Ser Ile Pro Val | His Pro Ile Gly Tyr Tyr | 290 | 295 | 300 |
| Asp Ala Gln Lys | Leu Leu Glu Lys Met | Gly Gly Ser Ala Pro Pro | 305 | 310 | 315 |
| Asp Ser Ser Trp | Arg Gly Ser Leu Lys | Val Pro Tyr Asn Val Gly | 320 | 325 | 330 |
| Pro Gly Phe Thr | Gly Asn Phe Ser Thr | Gln Lys Val Lys Met His | 335 | 340 | 345 |
| Ile His Ser Thr | Asn Glu Val Thr Arg | Ile Tyr Asn Val Ile Gly | 350 | 355 | 360 |
| Thr Leu Arg Gly | Ala Val Glu Pro Asp | Arg Tyr Val Ile Leu Gly | 365 | 370 | 375 |
| Gly His Arg Asp | Ser Trp Val Phe Gly | Gly Ile Asp Pro Gln Ser | 380 | 385 | 390 |
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr Leu | 395 | 400 | 405 |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala Ser | 410 | 415 | 420 |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp Ala | 425 | 430 | 435 |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr Ile | 440 | 445 | 450 |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val Asp | 455 | 460 | 465 |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys Glu | 470 | 475 | 480 |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr Glu | 485 | 490 | 495 |

| | | | | |
|---|-------------------------|-----|-----|-----|
| Ser Trp Thr Lys Lys Ser Pro Ser Pro | Glu Phe Ser Gly Met Pro | 500 | 505 | 510 |
| Arg Ile Ser Lys Leu Gly Ser Gly Asn Asp | Phe Glu Val Phe Phe | 515 | 520 | 525 |
| Gln Arg Leu Gly Ile Ala Ser Gly Arg Ala | Arg Tyr Thr Lys Asn | 530 | 535 | 540 |
| Trp Glu Thr Asn Lys Phe Ser Gly Tyr Pro | Leu Tyr His Ser Val | 545 | 550 | 555 |
| Tyr Glu Thr Tyr Glu Leu Val Glu Lys Phe | Tyr Asp Pro Met Phe | 560 | 565 | 570 |
| Lys Tyr His Leu Thr Val Ala Gln Val Arg | Gly Gly Met Val Phe | 575 | 580 | 585 |
| Glu Leu Ala Asn Ser Ile Val Leu Pro Phe | Asp Cys Arg Asp Tyr | 590 | 595 | 600 |
| Ala Val Val Leu Arg Lys Tyr Ala Asp Lys | Ile Tyr Ser Ile Ser | 605 | 610 | 615 |
| Met Lys His Pro Gln Glu Met Lys Thr Tyr | Ser Val Ser Phe Asp | 620 | 625 | 630 |
| Ser Leu Phe Ser Ala Val Lys Asn Phe Thr | Glu Ile Ala Ser Lys | 635 | 640 | 645 |
| Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys | Ser Asn Pro Ile Val | 650 | 655 | 660 |
| Leu Arg Met Met Asn Asp Gln Leu Met Phe | Leu Glu Arg Ala Phe | 665 | 670 | 675 |
| Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro | Phe Tyr Arg His Val | 680 | 685 | 690 |
| Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr | Ala Gly Glu Ser Phe | 695 | 700 | 705 |
| Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile | Glu Ser Lys Val Asp | 710 | 715 | 720 |
| Pro Ser Lys Ala Trp Gly Glu Val Lys Arg | Gln Ile Tyr Val Ala | 725 | 730 | 735 |
| Ala Phe Thr Val Gln Ala Ala Ala Glu Thr | Leu Ser Glu Val Ala | 740 | 745 | 750 |

<210> 619

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 619

agatgtgaag gtgcaggtgt gccg 24

<210> 620

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 620

gaacatcagc gctcccggta attcc 25

<210> 621

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 621

ccagcctttg aatggtacaa aggagagaag aagctcttca atggcc 46

<210> 622

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 622

ccaaactcac ccagtgagtg tgagc 25

<210> 623

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 623

tgggaaatca ggaatggtgt tctcc 25

<210> 624

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide probe

<400> 624

cttgttttca ccattgggct aactttgctg ctaggagttc aagccatgcc 50